

# The Use of Psychographics to Increase Climate Change Awareness - Grant Proposal

## iCons 1 - Independent Case Study



Evan Cohen, *The New York Times*

### Team J

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## I. Project Summary

This research project attempts to answer the question “How effective are targeted ads using psychographics at persuading people to care about climate change?” We believe that the answer will be very effective, as we have seen cases in the past where targeted ads, when coupled with the power of Big Data and psychographics, had a great influence over shopping habits and election results for large groups of people in America (Duhigg and “Cambridge Analytica”). Our goal is to convince people that climate change is a threat to them and that they should support campaigns to combat it. This study will focus on the community of people at UMass Amherst, but it is our hope that the tactics we

employ here could eventually be used to persuade people about the reality of climate change nationwide.

## II. Background

According to surveys conducted by The Yale Program on Climate Change Communication in 2019, an estimated 67% of adults in the United States said they thought global warming was happening (Marlon). While this is a majority of Americans, we believe that in order to enact a timely, effective solution to climate change, we need *everyone* to be on board. That not only means convincing Americans that climate change is indeed happening, but also that they have a responsibility to actually do something about it.

This is especially imperative considering that there are other forces at work to sow seeds of doubt in people's minds regarding the gravity of climate change. Naomi Oreskes and Erik M. Conway published the book "Merchants of Doubt" in 2010, which examined the methods used by climate change deniers to convince people that there isn't enough evidence to conclude that climate change is an issue. The director of the documentary inspired by the book, Robert Kenner, says that when speaking with leading climate change deniers to see if he could get them to speak in the film, one told him that "you could take James Hansen, the world's leading climate scientist, and I could take a garbage man, and I could get America to believe that garbage man knows more about science." It is becoming alarmingly clear that more than just scientific evidence is needed to convince people in our country of the dangers of climate change.

The Yale Program on Climate Change Communication has already begun experimenting with the use of targeted ads to combat this doubt and reinforce the reality of climate change in people's minds. Their approach has been to research different demographics, such as Latin-Americans, Christians, or young adults, to find out the stance they tend to take toward global climate change and how best to encourage them to care about it more. For example, they found that one of the main reasons Christians would be persuaded to care about climate change is to "protect God's creation" (Goldberg). This information could then be used to create an ad that uses that as its main message. While the program at Yale has had some success, there may be a better approach to sending out these ads.

We believe that the use of targeted ads based on psychographics, rather than demographics, would be more effective. Alexander Nix, CEO of Cambridge Analytica, calls it "a ridiculous idea—the idea that all women should receive the same message because of their gender, or all African-Americans because of their race, or all old people,

or rich people, or young people” (“Cambridge Analytica”). Instead, the researchers at Cambridge Analytica, the same company that helped Ted Cruz, who originally had the support of less than 5% of voters, gain 35% of votes in the 2016 Republican presidential primaries, target messages toward people who share similar psychographics—that is, traits based on the OCEAN model, whose acronym stands for openness, conscientiousness, extraversion, agreeableness, and neuroticism. They then customized their ads based on the presence of these traits in their target audience. For example, they would create a “rational and fear-based” ad for someone with high levels of conscientiousness and neuroticism, while they would present an ad focused on tradition and family to a closed, agreeable audience (“Cambridge Analytica”).

Our goal in conducting this study is not to find out whether or not targeted ads are effective at convincing people to care about climate change, but to answer the question “How effective are targeted ads using psychographics at persuading people to care about climate change?” and, based on the results in the example of Cambridge Analytica, we believe the answer will be very effective. It is our hope that, ultimately, this method can be used to persuade people to vote for candidates who plan to enact policies to mitigate global climate change.

### **III. Methods**

Our goal is to develop and send out a ten-question survey to about a thousand people in the UMass Amherst community over the course of two weeks. This survey will give us information about individuals’ psychographics as well as their response to different ads we show.

The survey will start with two background questions, one asking the individual’s age and one asking about the region of the United States they are from (with a separate option for international students). These will be the only questions we ask about their demographics, as what we are really focusing on in our study are people’s psychographics. We only ask the first two questions to get a sense of the range of people taking our survey. For example, if 90% of the people who take the survey are from the midwest (unlikely with the community we are surveying, but just to show an example), that is something we would want to report so that we can pick up other trends in our data that might have caused error.

The next five questions will ask about the individual’s psychographics, including one for each trait in the OCEAN model. We will not directly ask about each trait, but present

each individual with a statement , and ask them to rank, on a scale of strongly agree to strongly disagree, with that given statement. For example:

- Financial security is very important to me
- Generally speaking, most people are trustworthy and honest
- I think I am more self-confident than most people
- In general, it's more important to understand my inner self than be famous, powerful or wealthy
- Everything is changing too fast today

This way, the questions are easier to answer than something like “How conscientious are you?” because people might not know how to interpret that.

The final three questions will present the individual with a different ad that we have created to persuade them about climate change, and will ask them to rank, on a scale of 1 to 10, the likelihood that they would change the way they vote in upcoming elections based on the information presented in that particular ad. We will create one ad that appeals mostly to fact, one appealing to emotion, and one appealing to morals.

While we will do everything we can to ensure accurate results, we are aware that there is always a possibility for error when collecting results based on survey answers. Some sources of error may include too small of a sample size for certain psychographics, dishonesty of survey takers, and misinterpretation of questions. In order to prevent this as much as possible, we plan to create carefully worded questions that are stated as clearly as possible and to present relationships only on the most common psychographic profiles. For example, if only fifteen people out of a thousand were categorized as highly agreeable and closed, we would not expect to be able to conclude very much about this group. Unfortunately, there isn't anything we can do other than encourage people to take the survey seriously to prevent dishonest answers to questions, so we will have to assume that everyone is answering the questions as accurately as possible.

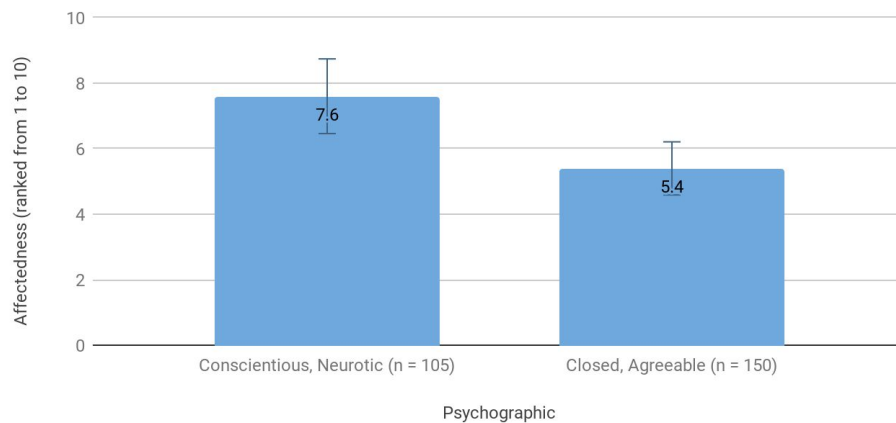
To distribute our survey, we plan to make a post in the facebook pages specific to each class of students at UMass Amherst, as these quickly reach a lot of people. We also plan to ask people we know to take it, and to perhaps set up a station in a public place on campus where people can take it if we feel we need more responses. Our goal of a thousand people is lofty, but we believe it is doable if we put in the effort and get the word out through multiple avenues.

Once we have our data, our plan is to go through each answer and match each respondent with a certain type of psychographic profile. By doing so, we will be able to decide which two profiles we got the most answers from. We will then compare how individuals in those profiles interacted with the ads we provided, and thus make a conclusion on what language and imagery is most and least persuasive for each group. We will also note down what differed between each group, and try to match these differences with the distinctions in their personalities.

Eventually, as an offshoot of this study, we hope to develop a program that could be used to send out these targeted ads on a larger scale. This program would take as input the level of each OCEAN trait a given individual has (each represented on a scale from 1 to 10) and output the ad that would be most convincing to them, based on what we find out with this study.

## IV. Anticipated Results

To What Extent Different Psychographics of People Felt Affected by Ad #1



Our goal is to create a graph such as the one above for each ad we show (for a total of three graphs). In this example graph, I chose two psychographic profiles of people: high in conscientiousness and neuroticism, and highly closed and agreeable, which I chose because they were the same example profiles given in the Cambridge Analytica example above. However, when we actually create these graphs, we will choose the two most common psychographic profiles we see represented in our group of survey-takers (as determined by the five psychographic questions).

We would determine how much each person was “affected” (y-axis) by looking at how they ranked the likelihood that they would change the way they voted based on this ad (where 1 is extremely unlikely and 10 is extremely likely). Other aspects of the graph would include the standard deviation for each group and the “n” value for each group, which is the number of participants we surveyed for that demographic.

## V. Timeline

Phase	Week 1	Week 2 + 3	Week 4	Second month
Phase I: Development of Survey	Create survey questions and ads			
Phase II: Distribution of Survey		Send out survey		
Phase III: Analysis			Create graphs	
Phase IV: Program Development				Create program to choose personalized ads based on results

## VI. Materials and Budget

The cost for this proposal will be \$0. However, we hope that this goes well and we are able to continue the project. If this is the case, the cost per thousand views of an ad on Facebook is \$11.20 and the cost per click is \$1.86. If we wanted people to interact with our ads, we would need a thousand dollars in order to get a pool big enough to compare

how different profiles reacted to our ads. If our algorithm works properly, the cost per click would go down, because we would be effectively persuading more people to interact with our ads and see what we have to say.

## VII. Key Personnel

Our group is ideal to carry out this study because of our background in computer science and environmental science. The computer science background helps us understand how algorithms work and how to use them to target different groups of people, and the environmental science background helps give us context for issues on climate change (and selection of ads).



**Antonio Escallón** - Environmental Science

Due to my background on Environmental Science, I'll be mainly formulating the ads and making sure the information they present is factual. In addition to this, I will focus my research skills on finding more information on Psychographics and how we can create them with our populations information.



**Samantha Chasalow** - Computer Science

My computer science knowledge will help us analyze the data and help create the code to target certain groups of people based on this data.



**Jessica Johnson** - Computer Science

With a background in computer science and data analysis, I have the skills needed to take the data we get from our survey and present it in a meaningful way, as well as to eventually help develop the program that will allow us to distribute these ads most effectively.

## **VIII. Relevance of Proposed Study and Broader Impacts**

This project will work as a pilot for our future work. By closely studying the UMass Amherst community through surveying and data acquisition, we will be able to understand how certain profiles within this community interact with the information we provide to them. Their interactions and answers will allow us to create both accurate psychographics of each individual and ads that will be persuasive to these same types of people.

Climate change is a time-sensitive threat to our planet and everyone who lives here. A timely, effective solution can only be reached with political action, and in order for political action to be taken, people need to support politicians who are invested in climate change. It is our hope that our work will result in a method (or a start of one, at least) to change the minds of those who do not think critical action is necessary. This is valuable to scientists because even if they have rock solid research, they need the general public to support them in order to act any sort of global change (in any field, not just environmental science).

We believe that once we are done with our pilot study, we will be able to expand our technology to a bigger population. If we find that certain psychographics of people on the UMass Amherst campus are heavily persuaded by a certain type of ad, we could potentially use that information to distribute similar ads to similar psychographics of people in different parts of the country. This would be a big undertaking and would require the support of other people and programs. Luckily, as we know, there are already programs (namely the Yale Program on Climate Change Communication) that are working towards the same goal and might be interested in the information gleaned from our study. Once this is done, people will hopefully be more willing to change their lifestyles (depending on their social status and ability to do so). Most importantly they would vote for politicians who provide solutions for this problem.

If our study goes well, it is our hope that we will be able to share these findings so that other groups like the Yale Program on Climate Change Communication can use similar tactics to spread the word about climate change to a larger population of people. Our hope is that we could do this by presenting at a speaking event at UMass or elsewhere, or, if we are still in quarantine, we could create an online resource, like a video, to share our results.



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