Climate Dialogues handout: Communicating with the Public About Climate Change

a) What People Believe About Climate Change / Arguing Over Climate Change

USA Public Opinion on Climate Change

National Poll (October, 2017);
Center for Climate Change Communication, George Mason University

7 in 10 Americans think global warming is happening; only 13% think global warming is not happening
(54% - "mostly human caused; 33% - "natural changes")

63% are at least "somewhat worried" about global warming; 22% are "very worried", twice the results from a 2015 study

42% think people in the U.S. are being harmed by global warming right now

Only 13% of Americans realize that over 90% of all climate scientists believe human caused global warming is happening (it's 97%) source of poll data: Yale & George Mason Universities
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Excerpts from Feb 2018 *Scientific American* article "The Tribalism of Truth" regarding "arguing to learn" vs. "arguing to win"…

In this time of rising tribalism, an important question has arisen about the psychological effects of arguing to win. What happens in our minds—and to our minds—when we find ourselves conversing in a way that simply aims to defeat an opponent? Our recent research has explored this question using experimental methods, and we have found that the distinction between different modes of argument has some surprisingly far-reaching effects. Not only does it change people's way of thinking about the debate and the people on the opposing side, but it also has a more fundamental effect on our way of understanding the very issue under discussion.

These results naturally lead to another question that goes beyond what can be addressed through a scientific study. Which of these two modes of argument would be better to adopt when it comes to controversial political topics? At first, the answer seems straightforward. Who could fail to see that there is something deeply important about cooperative dialogue and something fundamentally counterproductive about sheer competition?

Although this simple answer may be right most of the time, there may also be cases in which things are not quite so clear-cut. Suppose we are engaged in a debate with a group of climate science skeptics. We could try to sit down together, listen to the arguments of the skeptics and do our best to learn from everything they have to say. But some might think that this approach is exactly the wrong one. There might not be anything to be gained by remaining open to ideas that contradict scientific consensus. Indeed, agreeing to partake in a cooperative dialogue might be an instance of what journalists call "false balance"—legitimizing an extreme outlier position that should not be weighed equally. Some would say that the best approach in this kind of case is to argue to win.

… the mode of argument we engage in actually changes our understanding of the question itself. The more we argue to win, the more we will feel that there is a single objectively correct answer and that all other answers are mistaken. Conversely, the more we argue to learn, the more we will feel that there is no single objective truth and different answers can be equally right. So the next time you are deciding how to enter into an argument on Facebook about the controversial question of the day, remember that you are not just making a choice about how to interact with a person who holds the opposing view. You are also making a decision that will shape the way you—and others—think about whether the question itself has a correct answer.

b) Using the Psychology of Climate Change Communication

Overview of Key Psychological Lessons and Policy Advice

Psychological lesson	Policy guideline	Example policy recommendation
1. The human brain privileges experience over analysis	Highlight relevant personal experiences through affective recall, stories, and metaphors.	The National Park Service (NPS) gives concrete examples of how climate change has already harmed natural resources in specific parks.
2. People are social beings who respond to group norms	Activate and leverage relevant social group norms to promote and increase collective action.	Government climate science agencies could improve efforts to highlight descriptive norms (e.g., the scientific consensus on human-caused climate change).
3. Out of sight, out of mind: reduce psychological distance	Emphasize the present and make climate change impacts and solutions locally relevant.	NASA and The National Oceanic and Atmospheric Administration (NOAA) are supporting efforts to enable TV meteorologists to educate their viewers about current local climate change impacts.
4. Nobody likes losing but everyone likes gaining	Frame policy solutions in terms of what can be gained (not in terms of what is lost).	The Environmental Protection Agency's (EPA) "Clean Power Plan" focuses on cleaning up the nation's fuel supply, which will help clean up the nation's air and water, providing direct health benefits to all Americans.
5. Tapping the potential of human motivation	Leverage intrinsic motivation to support long-term environmental goals.	The President, Congress, and all federal agencies should be openly aspirational in designing climate policy initiatives that tap into citizens' deeply held motivations for building a better tomorrow.

source: climatecommunication.yale.edu

Climate Dialogues handout: Economics

a) Jobs   trends: jobs in solar & wind are growing; oil & gas trend is flat; coal jobs are declining

Table 1. Generation and Fuels Employment by Sub-Technology

people employed

source: US Dept. of Energy Jan. 2017 report	Electric Power Generation	Fuels	Total
Solar	373,807	-	373,807
Wind	101,738	-	101,738
Geothermal	5,768	-	5,768
Bioenergy/CHP	26,014	104,663	130,677
Corn Ethanol	-	28,613	28,613
Other Ethanol/Non-Woody Biomass, incl. Biodiesel	-	23,088	23,088
Woody Biomass Fuel for Energy and Cellulosic Biofuels	-	30,458	30,458
Other Biofuels	-	22,504	22,504
Low Impact Hydroelectric Generation	9,295	-	9,295
Traditional Hydropower	56,259	-	56,259
Nuclear	68,176	8,595	76,771
Coal	86,035	74,084	160,119
Natural Gas	52,125	309,993	362,118
Oil/Petroleum	12,840	502,678	515,518

b) Putting a Price on Carbon

NOTES ON A CARBON DIVIDENDS PLAN

Climate Leadership Council led by prominent Republicans (Jim Baker, George Shultz, etc) (see www.clcouncil.org) argues:

1) An initial $40 per ton tax on carbon emitted in burning fossil fuels would bring in ~$200 billion / year to be shared equally by all Americans. The Climate Leadership Council says "Families of four would see an average annual payout of $2000" by the Soc. Security Admn. The tax would slowly rise. A border adjustment tax would hike prices on imports from countries that don't impose carbon taxes--giving them incentives to do so.

2) The carbon tax factors environmental costs into prices. So prices of gasoline, non-renewable derived home heating fuels / electricity, etc. will rise. Rebates will offset increases—but 70% of Americans with lower incomes come out ahead since the wealthy tend to pollute more. Pricier fossil fuel will spur innovation, promote renewable energy, reduce greenhouse gas emissions, and help us meet Paris climate pact goals.

3) The CLC says "Polls reveal 64% of Americans favor this plan, including 54% of conservative Republicans. The popularity of dividends is crucial not only to the initial passage of carbon taxes, but also to ensure ongoing support for gradually increasing the carbon tax rate."

c) Putting a Price on USA Extreme Weather Events / Climate Change Impacts

Beyond putting a price on carbon, some argue that the fossil fuel industry should pay for the extreme weather damage their carbon emissions cause…Consier excerpts from *Sierra* magazine May 2018 "The Case for Climate Reparations":
[In late October 2017]… the U.S. Government Accounting Office released a report stating that during the last decade the government had spent more than $350 billion in response to climate-change-related extreme weather events. "Climate change impacts are already costing the federal government money," the report said, "and these costs will likely increase over time."

That's an understatement. In 2017, extraordinary wildfires, floods, and storms pummeled large sections of the United States and led to never-before-seen destruction. The complex of fires that torched California's Napa, Sonoma, and Mendocino Counties in October caused more than $10 billion in damages, making them the most expensive wildfires in U.S. history. At least 44

people lost their lives during the firestorm. The surreal Christmas-season fires near Santa Barbara led to another $2.5 billion in destroyed property. In August and September, widespread flooding during Hurricane Harvey caused at least $125 billion in damages in the greater Houston area and contributed to 93 deaths. Hurricane Irma damaged $50 billion worth of property in Florida, while Hurricane Maria's September scouring of Puerto Rico caused another $90 billion in damages. At least 60 people in Puerto Rico died as a direct result of the storm; as many as 1,000 lives may have been lost due to the long-running electricity blackout on the island. According to the National Oceanic and Atmospheric Administration, 2017 was the most expensive year for natural disasters in U.S. history, costing a total of $306 billion.

The mounting price tag of extreme weather events and the prospect of greater destruction to come have brought into focus a question that has been lurking at the edges of climate change conversations: Who should pay the costs of the death and destruction caused by human-driven global warming?

Climate change is no longer a far-off threat to be suffered by future generations. It is happening here and now, the destruction in real time.

Meanwhile, new research is tightening the chain of causality between fossil fuel consumption and extreme weather disasters. After Superstorm Sandy walloped New York City in 2012, many people were careful not to attribute the storm's strength to human actions. That uncertainty is evaporating under the glare of a hot new sky. Climatologists report that record-breaking heat and strong winds intensified the disastrous 2017 Northern California wildfires. A few weeks before, San Francisco had posted an unprecedented September high of 106°F. On the first night of the fires, the Diablo winds were clocked at a hurricane-force 79 miles per hour. The record rainfall during Hurricane Harvey (one Texas community measured 51 inches) was three times more likely to occur than it would have been during a storm a century earlier. In December, the *Bulletin of the American Meteorological Society* issued a first-ever report linking extreme weather events to climate change.