Center for Research on Environmental Decisions

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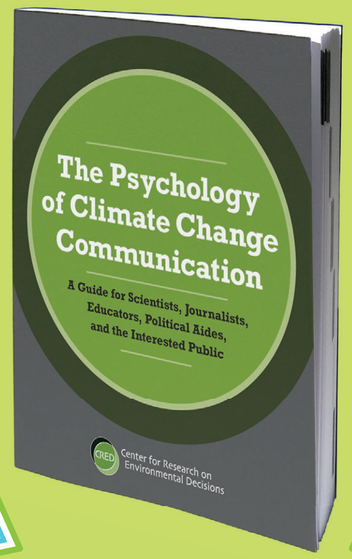
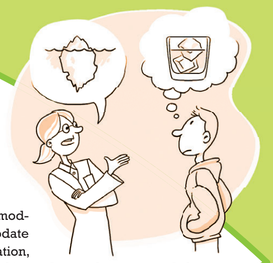
The 8 Principles from:

The Psychology of Climate Change Communication

A GUIDE FOR SCIENTISTS, JOURNALISTS, EDUCATORS, POLITICAL AIDES, AND THE INTERESTED PUBLIC



1 Know Your Audience



WHAT IS A MENTAL MODEL?

Mental models represent a person's thought process for how something works (i.e., a person's understanding of the surrounding world). Mental models, which are based on often-incomplete facts, past experiences, and even intuitive perceptions, help shape actions and behavior, influence what people pay attention to in complicated situations, and define how people approach and solve problems. Perhaps most important to climate change communicators, mental models serve as the framework into which people fit new information.

WHAT CAN A COMMUNICATOR DO?

The good news is that mental models are not static—people will update them by correcting misinformation, inserting new building blocks, and/or making new connections with existing knowledge. Communicators should first do their best to discover some of the climate change misconceptions commonly found in the general public's mental models (e.g., confusion about the ozone hole and climate change). They can then disconnect the incorrect climate change information from other parts of the model and replace it with new facts.

2 Get Your Audience's Attention

WHAT IS FRAMING?

Framing is the setting of an issue within an appropriate context to achieve a desired interpretation or perspective. The intention is not to deceive or manipulate people, but to make credible climate science more accessible to the public. Since it is impossible **not** to frame an issue, select a frame that will resonate with your audience.

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FRAMING AND THE POLITICS OF CARBON: TAX VS. OFFSET

CRED researchers polled a large national sample about a program that would raise the cost of products believed to contribute significantly to climate change (such as air travel and electricity) and use the money to fund alternative energy and carbon capture projects. The identical program was described as a "carbon tax" to half the respondents, and as a "carbon offset" to the other half. This simple change in frame had a large impact on people's preferences.

When considering a pair of products, 52% of respondents said they would choose a more expensive product when the cost increase was labeled a "carbon offset," but only 39% when it was labeled a "tax." Support for regulation to make the cost increase mandatory was greater when it was labeled an "offset" than when it was labeled a "tax."

Strikingly, the framing effect interacted with respondents' political affiliations. More liberal individuals did not discriminate between the two frames, but more conservative individuals strongly preferred the carbon offset to the carbon tax. The tax label triggered many negative thoughts and associations among more conservative individuals, leading them to reject the carbon tax.

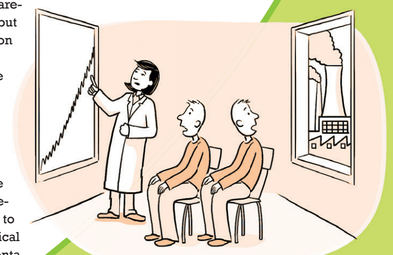
3 Translate Scientific Data into Concrete Experience

HOW TO MAKE ANALYTIC DATA MEMORABLE AND IMPACTFUL

Traditional statistical presentations of climate data rarely convey immediate *and* future challenges and the narrow window of opportunity for effective action. Such analytically focused presentations may raise awareness for climate change, but may not increase motivation to do anything about it.

The most effective communication targets both the analytic and experiential (or emotional) processing systems of the human brain. Communicators should make use of the following experiential tools in addition to the more common analytical ones when creating presentations on climate change:

* Vivid imagery (film footage, metaphors, personal accounts, real-world analogies, and concrete comparisons)
* Messages that create, recall, and highlight relevant personal experience and elicit an emotional response.



SHRINKING GLACIERS AND THE RETENTION OF FACTS

CRED researchers developed a multimedia presentation to show the effect of climate change on the world's glaciers. One module presented information that would appeal to the analytical processing system, such as scientific analysis, statistics, and graphs. Another targeted the experiential processing system of the brain, using vivid imagery (photographs, videos showing reduced glacier size over time, local news footage) and personal accounts to convey the message.

After randomly viewing either the experience-based vs. analytically-framed glacier module, students took a survey that measured their environmental attitudes, risk perceptions, and behaviors. The goal was to test the module's effect on memory of facts, feelings of worry, and the willingness to take action about climate change. The results showed that people retained more factual information and reported both increased levels of worry and willingness to take action after viewing the experiential module as compared to the analytic format.

Unfortunately, the resulting willingness to take action after an appeal to the experiential processing system alone can be short-lived. See #4 for why emotional appeals can backfire and how to avoid this phenomenon.

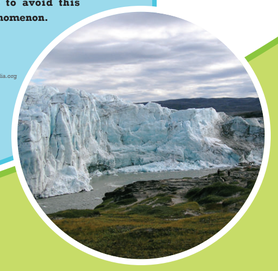


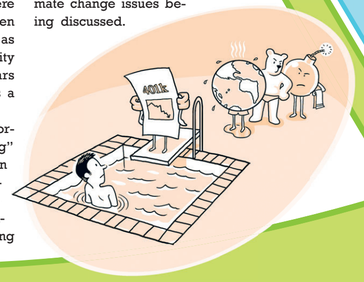
photo: L. Chang, commons.wikimedia.org

4 Beware the Overuse of Emotional Appeals

WHAT IS THE FINITE POOL OF WORRY?

Researchers at CRED and elsewhere have discovered that people, even those who might be described as "worrywarts," have a limited capacity for worrying about issues. Scholars refer to this limited capacity as a **finite pool of worry**.

To counteract the finite pool of worry and avoid "emotionally numbing" an audience, communicators can do things like balancing information that triggers an emotional response with more analytic information (as explained in #3) and creating a balance between an audience's pre-existing concerns and the climate change issues being discussed.



5 Address Scientific and Climate Uncertainties

HOW TO COMMUNICATE CLIMATE CHANGE UNCERTAINTY

Climate change uncertainties vary in type and significance, and they are difficult to convey without seeming to minimize the importance or understanding of the issue. One of the first key tasks for communicators is to put that uncertainty into context by helping audiences understand what is known with a high degree of confidence and what is relatively poorly understood.

WORDS WITH DIFFERENT MEANINGS TO SCIENTISTS AND THE GENERAL PUBLIC

SCIENTIFIC WORDS	NON-SCIENTIFIC MEANING	BETTER WORDS
Uncertainty	Not knowing	Range
Risk	Low-probability event	Probability
Error	Wrong, incorrect	Uncertainty associated with a measuring device or model
Bias	Unfair and deliberate distortion	Offset from the observed value
Theory	A hunch, opinion, conjecture, speculation	Physical understanding of how this works
Hypothesis	Conjecture	Framework for physical understanding
Values	Ethics, money	Numbers, quantity
Anomaly	Abnormal occurrence	The deviation from a long term average
Manipulation	Exploitation	Changes in experimental or model conditions to study the impact of that condition

6 Tap into Social Identities and Affiliations

TAPPING INTO GROUP IDENTITY TO CREATE AFFILIATION AND COOPERATION

In any given situation, we may call into play multiple identities (household member, town resident, CEO, parent, member of religious organization), each of which has its own set of goals. To resolve possibly conflicting goals, an individual decides which identity is most relevant in a situation. The strength of affiliation that someone feels toward other members of a group (or the people that may be affected by a decision) can determine which identity that person chooses to apply in a particular situation.

People who affiliate with a group are more likely to activate social goals (i.e., show concern for others) and cooperate in environmental decisions, such as joining a town's efforts to reduce greenhouse gas emissions. This is partly due to the "reward" found in helping the group reach its climate change goals. Affiliations with smaller groups (sorority, house of worship) can be stronger than those with larger groups (political party, country). Communicators should try to create a sense of group affiliation within an audience by finding the most common yet smallest affiliation that the audience can identify with.

photo: Mark Wolfe, commons.wikimedia.org

7 Encourage Group Participation

WAYS TO ENCOURAGE GROUP PARTICIPATION

* **Know your audience. Be aware of differences among participants (i.e., education, wealth, occupation, ethnicity, religious motivations, understanding of participation norms). Consider who has authority and who does not.**
* **Use pre-existing relationships within the group to communicate information since information passed through familiar channels is often most effective.**
* **Acknowledge that participants will have other goals. Meetings are often a place for people to socialize, meet new people, and advance their own personal or political goals. These "social goals" are a necessary part of participation.**
* **Try to involve as many people, or representatives of as many groups, as possible.**
* **Recognize different forms of participating. Work to include all voices—give everyone a chance to speak, and respect different methods for making an argument (verbal and non-verbal means of participation).**
* **Clarify expectations and the group's role in the decision(s) to be made. Will there be a final decision, or are members only advising a decision-making body elsewhere? Will decisions be made by vote or consensus?**
* **Use group discussion to generate solutions. People may be more willing to acknowledge a problem if they feel there are solutions to dealing with the problem. This can help keep messages positive, encourage optimism, and demonstrate how groups can be a powerful force in tackling the climate change challenges ahead.**

8 Make Behavior Change Easier

Policymakers, business leaders, and environmental organizations can make behavior changes easier by taking advantage of default effects (the human tendency to stick with the option that is selected automatically instead of choosing an alternate option), including making environmentally responsible behaviors the default option as often as possible.

HOW RUTGERS UNIVERSITY SAVED 1,280 TREES IN ONE ACADEMIC YEAR

After deciding that the university computer labs were wasting too much paper, Rutgers University simply made double-sided printing the default option on its lab printers. This tiny act saved 7,391,065 sheets of paper in the first semester, or roughly 620 trees for the semester, and 1,280 trees for the academic year. Students, who frequently have no preference, must now manually select the option to print on only one side of the page. The option to conserve is made that much easier by becoming the default option.

photo: Erich Nagler

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