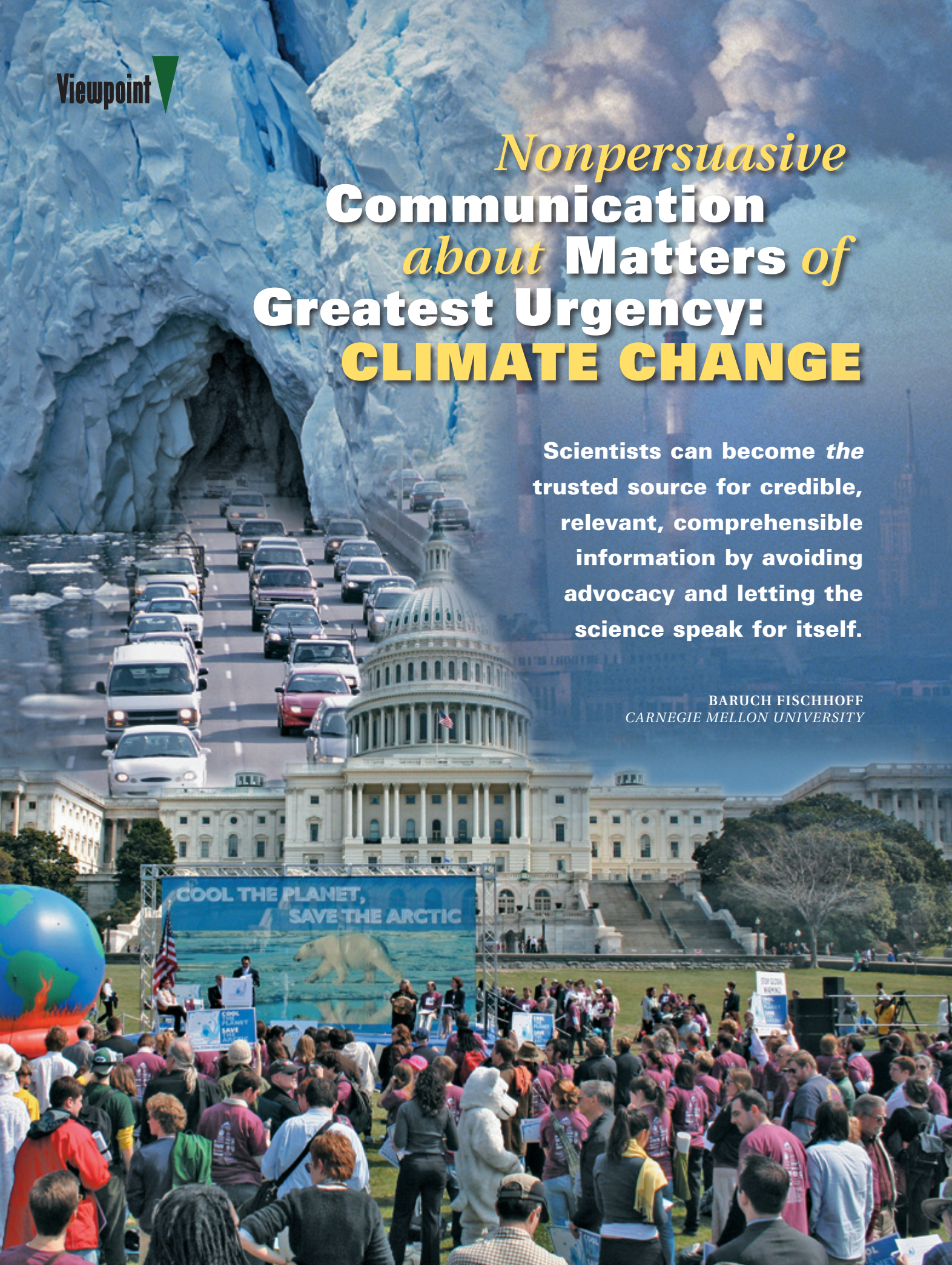
Viewpoint

# *Nonpersuasive* Communication *about* Matters *of* Greatest Urgency: CLIMATE CHANGE




**Scientists can become *the* trusted source for credible, relevant, comprehensible information by avoiding advocacy and letting the science speak for itself.**

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The prospect of global climate change has prompted a remarkable mobilization of the scientific community. That effort typically has sought a politically neutral science—estimating the impacts that might matter to members of various publics, then letting them decide what to do.

Some scientists, though, have been not just messengers but also advocates for the implications of climate science. Most of these scientists stress the expected severity of the impacts. A few downplay the problem. Most volunteer their time and energy, hoping to help others see the science as they do.

Such advocacy makes many scientists uncomfortable. Of course, science itself entails advocacy, as researchers make the case for the importance of their studies, the soundness of their methods, and the robustness of their results. However, that advocacy follows the familiar norms of the scientific community. Those norms compel scientists to, for example, identify uncertainties, consider all data (and not just supporting evidence), and update their beliefs as new evidence arrives.

Public advocacy, however, follows the norms of politics. Claims should be based on fact. However, they need not include all the facts. Evidence is assembled to make a case, not to provide a full picture—let the other side provide what is missing. Uncertainty is avoided—let observers infer it from the clash of certain views. Positions are defended, come what may.

Scientists typically resort to public advocacy after concluding that, without it, the science will not get a fair hearing. One way or another, the public is blamed for this failure. It might be blamed directly, for not understanding the science, or indirectly, for falling prey to the other side's advocates, who exploit its scientific illiteracy. Such advocacy runs the risk of winning battles over what science says, while losing the war over what science is.

## Give science a chance?

It is not hard to imagine how scientists might despair over letting the climate facts speak for themselves. For 20 years, scientists have known the basic climate gamble: in return for the benefits of carbon-emitting activities, we risk large, often unpredictable changes in the natural world with large, often unpredictable impacts on those who depend on it. From this perspective, we have had 20 years of irrational inaction. Even the recent decline in organized opposition to evidence of climate change might bring little cheer. If it took this long to acknowledge the problem, how long will it take to decide what to do to solve it?

Waiting for better science to clarify choices can be rational, but only if the evidence accumulates faster than the situation deteriorates. Otherwise, the expected value of the new science is less than the expected cost of inaction. Many scientists feel that we cannot afford to wait. If the public cannot understand the gamble, then perhaps scientists must simplify it for them—discarding the uncertainty, so that people will act. What good is taking the moral high ground in a collapsing world?

That conclusion is based on the assumption that scientists' usual *non*persuasive communication will fail, because the public cannot grasp the implications of climate science, when its facts are left to speak for themselves. However, another interpretation is also possible. Perhaps scientists have failed the public, by not providing it with the information needed to make climate-related decisions in a credible, comprehensible way. If so, then science advocacy might be like shouting at people who speak a different language, thus losing their trust while conveying little content, resulting in *un*persuasive communication.

Summarizing several surveys, Krosnick et al. (*1*, *2*) report that, for a decade or more, most Americans have accepted the fact of climate change. Thus, that key message has gotten through. The question then becomes why their awareness has produced so little action. Answering that question requires a closer examination than surveys can provide. The next section sketches the diagnostic process that is needed before it can be concluded that there is no alternative to advocacy.

## Climate-related decisions

As individuals or organizations, people face many decisions that affect or depend on climate. These include choices about how energy is produced and consumed, how land is used and protected, how insurance policies are written and honored, and how tropical diseases are prevented and treated.

Each choice reflects the decision makers' concerns about climate change and about other issues as well. Thus, people concerned about their homes' energy efficiency must consider not only the effectiveness of different options (insulation, windows, thermostats, etc.), but also the associated costs (financing, tax credits, payback periods, etc.), hassles (contractors, disruption, permits, etc.), information quality, and so on. Businesses concerned about their environmental footprint must consider not only the effectiveness of different options (electronic meetings, carbon offsets, cogeneration, etc.), but also their associated costs (reputation benefits, impacts on employee morale, etc.).

Analogous complexity faces people who want to relocate from endangered coasts (but have strong local ties), who want to preserve local biological reserves (but face wealthy developers), who want to build green workplaces (but must answer to demanding investors), who would like to fly less (but have far-flung families), and so on.

In each case, if people forgo an opportunity to reduce climate change or to mitigate its effects,

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then they might not understand or care about climate. However, in each case, informed, caring people might have defensible reasons for declining the climate-related action. Even actions that pass their personal cost–benefit test still might not pass their personal cost-effectiveness test. They might have better things to do with their time or money, or they might choose to wait for better options (e.g., more efficient and stylish cars; an empty nest, which allows for major downsizing).

It is impossible to judge people fairly or to provide them with needed information without knowing what is on their minds when they formulate, resolve, implement, and revise climate-related choices. Acquiring that knowledge requires research that is informed by climate science, decision science, and social science.

ERIKA ENGELHAUPT

**Global warming rallies, such as this one in front of the U.S. Capitol in March 2007, have helped raise awareness of climate change. Scientists can also make a difference by better communicating the facts.**

Climate science is needed to focus on choices that matter and to get the facts right. Decision science is needed to identify the facts that should matter most when people evaluate their options. Social science is needed to describe people's perceptions of those critical facts, as well as their goals when making choices. Together, these sciences can show where communication has broken down between citizens and scientists, how it might be improved, and what limits there are to lay understanding (*3–5*).

Describing any decision well requires dedicated research, drawing on results and methods regarding decision-making processes in general. The next section sketches some of those processes as they relate to climate-related decisions. Moser and Dilling (*6*) summarize climate decision research (*7–9*).

## Behavioral principles

The social science of decision making is behavioral decision research (*10, 11*). Its studies have identified some relatively simple processes that emerge in many decisions (*12*). The box on p 7207 shows several such processes with some corollaries and their implications for decision-aiding interventions.

Although these processes are simple, deriving behavioral predictions from them is not. The number of processes is large. Complex, often subtle situational factors shape which behaviors are triggered, how they are expressed, and how they interact. As a result, sweeping generalizations about behavior are rarely justified. For example, one hears the claim that people are ruled by their emotions, hence cannot be trusted to make important decisions wisely. However, the research (Process 5 [box on p 7207]) finds that emotions play both positive and negative roles, varying by decision and emotion. Experience should afford researchers some advantage in predicting these processes. However, even their intuitions (including my own) should be disciplined by data. Only with such research can we know how reasonable people's choices are—and might be with clear, relevant nonpersuasive communication.

The investment in such research is small compared with that supporting persuasive communication—and both pale next to the investments in creating and disseminating persuasive communications. The temptation to move directly to persuasion is clear: at a time when action is urgently needed, research can be seen as slowing things down and diverting scarce resources.

Succumbing to the temptation to rely on persuasion can be risky. People overestimate how widely their values are shared. As a result, people may mistakenly believe that others will find their messages as persuasive as they do. People overestimate how widely their knowledge is shared. As a result, they may omit vital facts, assuming them to be common knowledge. People overestimate how clearly they communicate. As a result, even when people know what to say, they may not realize that they are not getting through.

Research protects scientists and citizens against such imperfect intuitions. It does so by giving citizens a voice when they lack direct contact with scientists. If research allows people to speak their minds freely, it should increase their chances of acquiring the facts that they need and of being judged fairly. It can forestall the rush to judgment that turns scientists into advocates, when people want to make their own choices—and could do a reasonable job with a little help.

Communication entails listening as well as speaking. Research provides a way to do that listening. To do the job, it should be able to hear concerns like:

"Thanks for the guilt trip on insulation, but I'm renting."

"Enough with the ethanol, until I get a straight

## Five Decision-Making Processes and Their Implications

**PROCESS 1**

**People consider the return on their investment in making decisions.**

*As a result:*

They can be paralyzed by disinformation.

They can knowingly ignore big problems.

They can focus on small problems, if it's easy to learn about them.

They can dig in, if it really matters to them.

*In response, interventions can:*

Focus on the few things that really matter.

Make the decision seem comprehensible.

Reduce the number of decisions by offering one-time commitments; creating (unthinking) habits; bundling climate with other concerns.

**PROCESS 2**

**People dislike uncertainty.**

*As a result:*

They will pay a premium for sure things.

They can be insensitive to differences in the probabilities of uncertain events.

They can be sensitive to ambiguities in how choices are posed.

*In response, interventions can:*

Show sure benefits.

Show the uncertainties in "business as usual".

Establish a reputation for credibility.

**PROCESS 3**

**When faced with novel choices, people may not know what they want.**

*As a result:*

They can be manipulated by how choices are framed.

They can be challenged by the need to evaluate unfamiliar options.

They can be challenged by the need to choose among dissimilar outcomes.

*In response, interventions can:*

Focus on deep, potentially overriding concerns.

Focus on comparable outcomes (monetary costs and benefits, lives saved today vs later).

Provide deep experiences.

**PROCESS 4**

**People are good at keeping track of what they see, but not at detecting systematic biases in that evidence.**

*As a result:*

They may not even think that appearances might be deceiving.

They may not know how to adjust for bias.

They are often overconfident in their knowledge.

*In response, interventions can:*

Present evidence that is ordinarily missed.

Explain the reasons for bias (e.g., news media reporting practices).

Ask people to generate counterexamples.

**PROCESS 5**

**Transient emotions can affect perceptions, perhaps enough to tip close decisions.**

*As a result:*

Anger is mobilizing. It focuses attention on people, not situations, as the causes of problems, and it promotes optimism.

*In response, interventions can:*

Have people consider which emotions should govern their decisions.

Alert people to others' manipulations of their emotions.

Encourage preplanned choices made with appropriate emotions.

**SOME OTHER PROCESSES**

**People have difficulty projecting nonlinear trends.**

**People are insensitive to opportunity costs.**

**People have difficulty imagining themselves in visceral states different than their current one.**

**People are prisoners to sunken costs and hate to recognize losses.**

**People confuse ignorance and stupidity.**

answer about its effects on soil depletion and rising corn prices."

"Shouldn't we focus on making our descendants wealthy enough to deal with climate change?"

"Those are halfway measures, giving us a false feeling of action."

### Managing nonpersuasive communication

As with understanding people's current beliefs and actions, creating scientifically sound communication requires recruiting and coordinating three kinds of experts: domain scientists, to represent the research about climate change and its effects; decision scientists, to identify the information critical to specific choices; and social scientists, to identify barriers to communicating that information and to create and evaluate attempts to overcome those barriers. It also requires designers, to implement communications in sustainable ways.

Well-managed communication teams accept ideas from anyone but give authority to the appropriate experts. Thus, climate scientists can point to research that alarms them and might motivate laypeople if they only knew about it. However, climate scientists should not demand simplistic messages because they believe that laypeople can't grasp uncertainty. Social scientists can point to research that suggests undue public alarm or complacency. However, social scientists should not create corrective messages until climate scientists have evaluated the accuracy of lay beliefs and decision scientists have evaluated their importance. Designers can point to scientific terms that might confuse lay audiences. However, they should not edit those terms without climate scientists checking the changes for accuracy. Decision scientists can point to facts that seem critical to lay choices. However, they should not demand messages highlighting those facts without social science evidence on lay decision makers' goals, constraints, and existing knowledge.

Thus, for each element of a communication, climate scientists should attest to its accuracy, deci-

sion scientists to its relevance, social scientists to its clarity, and designers to its format. Failing any of these tests can undermine a message's accuracy, tone, or comprehensibility. Such coordination requires strong leadership. Without it, nonpersuasive communication has little chance.

## Reasons for optimism

Human behavior will shape the extent and effects of climate change. Communications will shape those behaviors. Some communications are direct, such as media reports, movies, and issue advertising. Other communications are indirect, such as the information embedded in energy-saving devices, financial reports (e.g., sustainability practices), and public policies (e.g., land use, transportation).

Nonpersuasive communication lets the science speak for itself. It recognizes that reasonable individuals may reach different conclusions—even if it is undertaken in the hope that most individuals will make similar, desired choices (e.g., commitment to energy efficiency). If it fails, then persuasive communication may be needed. However, such advocacy comes at a price, turning scientists into peddlers rather than arbiters of truth. Advocacy must be very effective to compensate for eroding scientists' status as trusted observers and reporters.

Anyone wary of advocacy, for reasons of principle or efficacy, should be sure that the public's failure to take desired actions reflects its failure to understand the issues. When that determination is made, there is no substitute for analytically studying the decisions that people face and empirically studying their responses to them. However, the research record suggests the following complex general hypothesis for predicting the success of any specific nonpersuasive communications. (Definitions of italicized terms follow.)

People tend to make *reasonable* choices if they get key facts in a *credible*, *comprehensible* form; have *control* over themselves and their environment; are judged by *their own goals*; and have basic *decision-making competence.*

*Reasonable* choices are sensible, given people's beliefs and values, but need not be rational, in the exacting sense of following the utility theory axioms. *Credible* facts come from sources trusted for their competence and honesty. *Comprehensible* facts allow people to extract as much information as is needed for decision-making purposes. *Control* means freedom from social coercion (although not from social norms) and from emotional distraction (although not from appropriate emotions). *Their own goals* may include consequences of both climate change and climate-related actions, affecting both themselves and valued others (e.g., people, communities, species). *Decision-making competence* entails mastery of essential skills (e.g., assessing uncertainty, applying decision rules) (*13*).

## Communication imperatives

The viability of a democratic society depends on its ability to create these conditions, which empower citizens to exercise their decision-making abilities to the fullest extent possible. Scientists can fail to do their part by not performing the needed research or by abandoning the field to advocates.

Scientists faced with others' advocacy may feel compelled to respond in kind. However, they can also try to become *the* trusted source for credible, relevant, comprehensible information by doing the best job possible of nonpersuasive communication. With long-term problems, like climate change, communication is a multiple-play game. Those who resort to advocacy might lose credibility that they will need in future rounds.

Scientists who avoid science advocacy can still engage in value advocacy by speaking about the things that they cherish. As seen in the success of science films and centers, the passions of scientists often matter to nonscientists. Like artists, scientists have a special sense for the uniquely meaningful features of the world around them, enabling them to speak with an authenticity that goes beyond technical estimates of the costs and benefits of climate-related decisions.

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