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Rethinking climate communications and the “psychological climate paradox”

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ABSTRACT

Climate science has provided ever more reliable data and models over the last 20–30 years, thereby indicating increasingly severe impacts in the coming decades and centuries. Nonetheless, public concern for climate change and the issue's perceived importance has been declining over the past few decades, thus giving less public support for ambitious climate policies. Conventional climate communication strategies have failed to resolve this “climate paradox.” This article reviews research on the psychology of the climate paradox, and rethinks new emerging strategies for how to resolve it in the coming decades.

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1. Introduction

There is a growing discrepancy between the increasing scientific certainty about anthropogenic interference with the climate system and a decreasing concern and popular support for ambitious and effective climate policies [1–8]. There has never been a more accurate and consistent understanding of how serious climate change is as in the latest assessment report from IPCC, as well as such a strong scientific consensus [9]. However, public concern and prioritization is declining in many countries, particularly wealthy ones [10–12]. Even if solid majorities in most Western countries report some or high concern, the issue's importance is generally low relative to other issues [4,10,13]. We call this surprising and growing discrepancy the psychological climate paradox [14,15].

A number of tentative explanations of the climate paradox have been proposed, including: climate change perceived as distant in both time and space, the lack of a global treaty and political action, the quest for economic growth, the financial crisis, the complexity of the problem leading to numbing and helplessness,

cultural filters, cognitive dissonance, limited individual responsibility, an active counter-campaign and denial as a fear-avoidance strategy [10,16–21]. The default response from many climate scientists and policymakers to what they perceive as a lack of the public to respond adequately to “facts” has been to increase the volume and amount of information. This approach to climate science communication has failed, and there is ample criticism of the default information deficit approach taken by conventional climate communication in the literature [10,22–25]. But there is much less knowledge as to which alternative climate communication strategies are applicable and effective in different cultural contexts [10,24]. This article will give a review of the main psychological barriers for climate communication that contribute to the climate paradox, and more importantly, also rethink new strategies for the energy and climate message that have the potential for overcoming the paradox.

Thus far, the climate debate has been mostly informed by the physical sciences in defining the climate problem, and by one narrow branch of social science – neoclassical economics – in evaluating policy. Both disciplines fully rely on rational and quantitative methods to help analyze the issue of climate change. There has been a correspondingly less use of qualitative and cultural approaches to the public's behavior, and institutional and societal responses. The earth sciences and economic disciplines have been critical in

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defining what is at stake and which economic measures are ideal to efficiently reduce emissions. Yet, more varied voices from the social sciences (e.g. sociology, psychology, anthropology, political science) are needed to address how the problem is accepted by the public and how governments and the public will respond to the proposed solutions [26]. Understanding individual and social responses to climate change is clearly becoming just as important as understanding physical climate change itself. Public support is needed in democracies for efficient and sufficient policies to be legislated.

To explain the psychological climate paradox, it is not sufficient to simply blame the one-to-many model of information campaigns or poor communication models such as the information deficit model. There are additional and deeper psychological barriers that impair our reaction to the unsettling facts of climate change [10,20,21]. Improved strategies for climate communication can only be developed from a better understanding of these barriers. Let us take a look at five barriers in the modern human's psychology that prevent the facts about climate change from being internalized and influencing behavior.

2. Section I – Psychological barriers that uphold the climate paradox

By reviewing the research and literature from four traditions within psychology (primarily from evolutionary psychology, cognitive psychology, social psychology and depth psychology) over the past two decades, I have identified five main barriers to effective climate communication: (1) climate change is perceived as *distant*, (2) it is often framed as *doom*, cost and sacrifice, (3) few opportunities for action weaken attitudes through *dissonance*, (4) fear and guilt strengthens *denial*, and (5) climate messages are filtered through cultural *identity*.

2.1. Climate seems distant in time, space and influence

Climate change is often presented to the public so that impacts seem distant in *time*. The years given such as 2050 and beyond seem very far into the future. Secondly, the climatic events being described are often distant in *space* (the effects are typically strongest in the Arctic, Antarctica, the El Niño in the Pacific Ocean, in Bangladesh, the Maldives, the Philippines, port cities such as New Orleans, in remote Himalayan glaciers, etc.). The culprit itself, carbon dioxide, is *invisible* to the human eye (CO₂ is colorless and odorless), and greenhouse gases are still very *rare* (now around 400 ppm CO₂ in the atmosphere). They are depicted in very *abstract* terms to the public (measured in so-called CO₂ ppm equivalents, which very few non-experts truly understand). Its effects work through invisible “radiative forcing” in the atmosphere, measured in W/m² (whatever that means, it cannot be seen nor felt, only abstractly reckoned with).

Moreover, the global scale of the climate issue makes many feel *helpless* since – even if we stopped emitting now scientists say – its delayed effects (including from what our grandfathers burned with coal from the last century) will continue to trouble us in decades and even centuries ahead. And even if I or we stop emitting, then the US or China will still continue. This feeling of helplessness therefore grows from the fact that looming climate disruptions are very distant from our own *locus of control*. Research has shown that feelings of risk of harm and responsibility for the environment are greatest at the neighborhood level and decreases the further away the impacts happen [1,27]. Additionally, nearly everyone (in wealthy countries) are implicated by burning fossil fuels to support our lifestyle, thus everyone has a responsibility for the common results

to benefit all. Hence, it is easy to attribute responsibility to distant others such as members of parliament, congressional representatives or international leaders, but there is a long *social or power distance* to all those with the perceived power to do something with it.

Lastly, while weather is concrete, climate is a calculated *average* over many years and decades, and the only thing we can concretely sense is the weather. Even though extreme events may make strong impressions of urgency when they occur, these are still the exceptions, while more normal weather is always the dominant condition. Research has shown that both the public's level of concern and the issue's importance is highly dependent on recent weather [28,29]. Abstracting from weather to the climate over many decades is very difficult for the intuitive, fast cognitive system to comprehend [30,31].

Consequently, there are several dimensions along which a huge distance is felt between the personal self and the global climate issue, such as time, space, causes, physical mechanisms, uncertainty, locus of control, power distance and abstraction [20,32,33].

The main effect of this barrier of psychological distancing is to reduce the sense of risk and the urgency of impending climate disruption [32,34]: as soon as someone says “climate change,” people are already beginning to turn off their feelings of risk [35] and morality, as they place it in a box marked “someone else's problem” or “a problem I will deal with in the future” [27]. Climate change can be called a diabolical problem [30] in that it is almost like a “ghost”: odorless, colorless and invisible. It is easily perceived as a half-real, evil omen from the past hinting of future death and disaster – but it does not really register as real, substantial and urgent in our perceptual system.

In case of a concrete immediate threat, like a speeding truck coming toward you or a basketball thrown toward your face, your whole body reacts. The fight-or-flight response gets the adrenaline rushing. This is a bodily response pattern that has developed over millions of years. The human body is very good at responding to threats that are close and visible, has happened before, has immediate effect, a clear purpose, a clear enemy and has serious consequences for me or my family. Evolutionary psychology states that threats perceived as remote and distant to the self arouse far less concern and visceral response [20,36,37].

This distancing effect contributes to our understanding of why information campaigns are insufficient to convince people of the dangers of climate change. The abstract and rational expositions, utilizing graphs, data, measurements and global prognoses into future decades, do not manage to trigger the evolutionary risk perception system to create a sense of a real local threat with a sense of urgency that produces a sustained high issue importance. However, this is what is needed to create stable democratic support for more ambitious public climate policies.

2.2. Using the wrong framings backfires on the message

The second psychological barrier comes from the unintended effects of the framing used by conventional climate communication. The concept of framing refers to the unseen, often subconscious frame around concepts and discussions that affect how an issue is perceived. Through the metaphors used, different words and concepts evoke different frames. For example, there is a huge difference between an “illegal immigrant” and a “humanitarian refugee,” while the expression “abuse survivor” comes with a different frame than an “incest victim.” If you are told *not* to think of a pink elephant, it still brings out a cognitive frame that envelops the conversation, even if you actually manage not to think about pink elephants. The background image, the linguistic framing, is

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