

Opinion

Public Awareness: What Climate Change Scientists Should Consider

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Abstract: In this Opinion, the importance of public awareness to design solutions to mitigate climate change issues is highlighted. A large-scale acknowledgment of the climate change consequences has great potential to build social momentum. Momentum, in turn, builds motivation and demand, which can be leveraged to develop a multi-scale strategy to tackle the issue. The pursuit of public awareness is a valuable addition to the scientific approach to addressing climate change issues. The Opinion is concluded by providing strategies on how to effectively raise public awareness on climate change-related topics through an integrated, well-connected network of mavens (e.g., scientists) and connectors (e.g., social media influencers).

Keywords: climate change; public awareness; social epidemic

Living through the 2020 coronavirus pandemic, I was amazed by the publicity and attention this phenomenon gained—it was everywhere, from a regular conversation at a bus stop to all the major news channels. As a climate change researcher, I had mixed feelings: I was fascinated to see collaborative international communities coming together and aiming to solve a global-scale issue, but at the same time, I was disappointed to not see the same attention for another catastrophic, globally impacted issue—climate change. Curious, I asked myself what the climate change community could learn from the pandemic situation to gain the same attention. The answer I came up with was, “Public awareness is the key”.

We, the scientists, had long ago come to the conclusion that the catastrophic impact of climate change is undeniable [1–4]. We have put tons of graphs, data, and presentations together and communicated them mainly within the community [5–8]. Accordingly, we have developed mostly science-oriented strategies to address the issue [9–11]; these are necessary but, apparently, not enough. The CO₂ emission levels are still rising and we are falling behind in controlling the situation [12]; but why? We, the scientists, developed strategies that should have resulted in effectively controlling the situation. All the chemistry, physics, and math we developed were well thought out. So, what is missing here?

To solve any problem, scientists tend to take a systematic approach: (1) Identify the issue; (2) hypothesize a solution; (3) design an experiment/simulation to test the hypothesis; (4) repeat stages 2 and 3 to come up with a solution. This strategy has worked well throughout science’s history; most of our inventions and discoveries are the result of this type of approach. However, the strategy is apparently not sufficient to address climate change. The pandemic experts were also following pretty much the same strategy, but what made them build momentum was something different: Public awareness.

To address global-scale issues such as climate change, it is undoubtedly critical to involve the global community through public awareness. In the case of climate change, public awareness falls way behind scientific advances. Lack of proper education regarding climate change is so severe that

officials openly call this issue a “hoax”, and many people buy it. So, what can we, the scientists, do to ensure that the next time someone calls this catastrophic global phenomenon a hoax, people question that person’s basic knowledge instead of cheering for them?

A valuable addition to the scientific approach to addressing problems is the pursuit of the public awareness route. Similar to the case of the 2020 coronavirus pandemic, when the society is aware of the issue and its potential risks, the result will be a large-scale acknowledgment of the issue. Any large-scale acknowledgment has great potential to build momentum. Momentum, in turn, builds motivation and demand, which can be leveraged to develop a multi-scale strategy to tackle the issue. For example, many major pharmaceutical companies substantially focused on developing vaccines during the 2020 pandemic as a result of the increase in demand. This pathway to solving the climate change issue could be a valuable asset that the science community must seriously pursue. Now, the key question is this: How, as the first step of the pathway, can the climate change scientists effectively communicate with society to raise public awareness?

Public awareness can be effectively achieved if the climate change phenomenon becomes a social epidemic—similar to the outbreak of a viral infection (e.g., COVID-19), an idea can be spread within a short period of time. In the scenario of climate change as a social epidemic, the discussion and education about this issue are no longer being contained within a small scientist population but have been spread to much larger, global audience groups with diverse backgrounds. The social epidemic concept was first popularized by Malcolm Gladwell, in the book *The Tipping Point* [13], where he elaborates on how ideas, messages, behaviors, or products can be spread exponentially, similar to the outbreak of a viral infection. He also elaborates on the elements that are necessary to build a social epidemic. An integrated, well-connected network of various groups of people is needed to make the climate change idea an epidemic. First, a group of experts specialized in areas related to climate change (scientists, economists, policymakers, etc.), referred to as “mavens”, is necessary for the network. Mavens have deep knowledge about the phenomenon and do not have massive networks; however, they have a major influence over those in their own community, and therein lies the power of mavens. An apt example would be a reputed climate change scientist trusted within the community, whose network, however, is often limited to that particular community.

Another key element of the network that can make the climate change idea an epidemic is the connectors. Connectors are people with many social acquaintances from all walks of life. Their role is vital to the emergence of idea epidemics since they have the ability to spread an idea to a large number of people, as opposed to mavens, who communicate within a (semi)closed circle. As an example, social media influencers (athletes, singers, bloggers, etc.) who often have from a few hundred thousand to a few million virtual followers can be considered as connectors. An effective network is one in which the mavens and connectors are closely working together to spread the climate change message; the mavens design the contents, while the connectors communicate them with the public (Figure 1).

In addition, for an idea to be an epidemic, it has to be well polished and tweaked to deliver a positive message. In the case of the climate change phenomenon, the idea should not be spreading fear about the devastating impacts of climate change; instead, the campaign must focus on educating people on their role in mitigation (e.g., by managing their waste production) and preparing them for possible adaptations. Last, but not least, the timing and mental state of the population when the message spreads are important. Humanity has recently experienced a COVID-19 virus outbreak with its global impacts, although experts warned of a pandemic decades ago [14,15]. Through this outbreak, society experienced a global-scale phenomenon that put human life at risk and provoked the urge to come up with a solution, e.g., developing a vaccine. Mavens and connectors must take advantage of this experience of the global society to raise public awareness about the climate change issue; this can eventually lead to the design and execution of multi-scale solutions to tackle this life-threatening phenomenon.

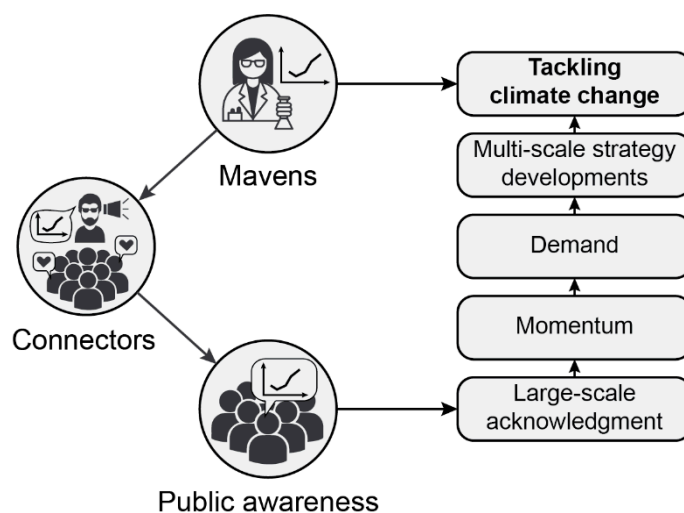


Figure 1. An alternative route to tackle the climate change issue.

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