

SECOND OPINION

HOST A SECOND OPINION DISCUSSION IN YOUR COMMUNITY

Action begins at the local level, so take part in a discussion about climate change at home

The overall theme we are exploring in this edition of Second Opinion is:

Given the impact on the planet that the rise of the human species has already had over the past millennia – the dawn of agriculture, land and water use, emerging infectious and non-communicable disease, climate change, species extinction and other challenges – is there reason to be optimistic about the future of Earth, and our place in it? Will our species have the ideas, means – and the will – to successfully adapt to this upcoming era of global change and to alter its course?

QUESTIONS:

[THE CHALLENGES: SCIENTIFIC, TECHNICAL, SOCIAL, AND CULTURAL]

1 - Catrina Rorke has written that “The globe is indeed warming, and we are largely responsible”, and indeed the Smithsonian Institution has issued a Statement to that same effect, saying “the global climate is warming as a result of...human activities.” Yet despite this general, overall consensus, there remains scientific uncertainty about the exact details of what the warming of the planet will mean for the world and human civilization and over what time. **What are the challenges ahead for getting a better understanding of climate change’s impact?**

2 - There are numerous psychological studies that suggest that, paradoxically, the more evidence people see that a particular belief they hold is incorrect, the more they actually dig in and hold on to that belief as true. **What are the challenges you see in getting large groups of individuals -- entire societies, even -- to change their minds about a particular aspect of the world such as climate change and further, change their behavior?**

3 - In the mid-1800s, there was concern about the scarcity of whale oil, which was used to light lamps in homes. Eventually human ingenuity found alternatives in the form of petroleum products and the development of newer forms of energy is one of the major areas of endeavor today. **When we think about creating energy for the future, as well as adapting to potentially large shifts in climate, what are the challenges in fostering the innovative new technologies that we will need to adopt -- can we be confident that we'll "invent our way" out of our dilemmas?**

4 - Many people continue to argue that the US government can and should play a greater role in helping direct large-scale initiatives for the greater good in a variety of areas, including building infrastructure, addressing social inequities, and undertaking scientific research. **What are the challenges in getting governments to address the looming changes ahead?** And should any governmental initiative be at the local or national level – or both?

5 - It has been suggested that one of the biggest impacts of climate change and human population growth in the coming years is the growing extinction of species around the world. **Why does a diverse population of animals and plants matter to Earth's -- and human -- survival?**

6 - This past decade, for the first time, more than 50% of Earth's 7.5 billion people lived in cities. Indeed, "cities" could arguably be called the "Third Age" of human existence -- the first being hunter-gathering, the second agricultural. Yet the world's cities, more than 20 of which globally have more than 10 million residents, were never designed for such population density -- and many large cities are located on shorelines threatened by rising seas. **What are the challenges and opportunities that this new era of "urban" human existence gives us?**

7 - In the 1960s the ecologist Garrett Hardin published a now-famous essay on the "Tragedy of the Commons" -- where he pointed out that there are some situations where people, acting in their own self-interest, engage in behaviors that in the end, collectively, negatively affect their own self-interest. He used as his example individual shepherds having their sheep graze -- and eventually over-graze -- in a "commons" meadow which over time becomes barren. **It could be argued that our current climate situation is another example of a "commons" where people and nations, acting in their own interests, actually wind up creating a result that is worse for them in the end. What are the challenges for us in overcoming this similar "tragedy of the commons"?**

8 - Sean McMahon, a scientist from our own Smithsonian Environmental Research Center, which Tuck leads, once remarked that "it is sometimes more effective to convey an idea to society with art rather than with science." And indeed, for many people art connects in a visceral way that simple facts cannot. **What are the challenges in leveraging culture to help people better understand the changes that are underway? What are the obstacles to getting that cultural message out?**

9 - In the end, what do each of you think is the single biggest challenge facing us in the future?

[SOLUTIONS: SCIENTIFIC, TECHNICAL, SOCIAL, AND CULTURAL]

1 - Despite the many challenges of effecting large-scale change in a society, there are nevertheless salient examples of big changes that have occurred in Western Society for the greater good -- the abolition of slavery and the expansion of voting rights to women, to name two. **How do you think we as a society can best enable ourselves to make the necessary changes to adapt to the coming era of climatic disruption?**

2 - We at the Smithsonian believe that humans can play an active role in managing and adapting to the changes that are coming our way. Indeed, at our recent “Earth Optimism” summit, we learned of many examples of how human actions helped improve the environments for other forms of life and ourselves. **Can you elaborate on some of the examples of how humans are engaging in the environment in a positive way, and the principles behind this work?**

3 - Sometime in the mid-2000s our species is predicted to top out in its population growth at 10 billion or so people. This dramatic rise in population over the past centuries has created great shifts in Earth and its inhabitants already, and adding billions more people to the human roster will no doubt create more. Yet some people argue that in fact, the human condition has never been better overall -- better access to food, shelter, safety, and so on -- though huge numbers of people have been left out of that progress. **What are the drivers of greater development around the world as our population grows, and how can we best spread the fruits of innovation and development to more people?**

4 – Twenty thousand years ago, what are now Chicago and Boston were under a sheet of ice hundreds of meters thick -- part of the maximum extension of the world’s glaciers; some 8,000 years ago, what is now the Sahara Desert was a grassland. It’s clear that, viewed from the distance of “deep time”, Earth is a very complicated environmental system that is constantly undergoing changes and adapting to new inputs. **What is different about the environmental changes happening now, and how Earth’s systems are adapting?**

5 - Katrina, you write that “There is no morally correct level of atmospheric carbon dioxide.” **How does adapting to the coming changes require new forms of morality, religion, philosophy and law?**

6 - 150,000 years ago all humans existed as hunter-gatherers, foraging the land for their food. By 2,000 years ago, many humans had converted to farming -- a very different infrastructure for meeting their needs. Now more than half of humans live in cities. Clearly our species is capable of changing our platforms and systems in order to adapt to new changes. **Are there examples of how technology and new technological infrastructures are enabling people around the world to leapfrog into a new way of living?**

7 - Times of large-scale change often come with large-scale debates, and friction between differing points of view on how best to proceed, from culture to politics to science to religion. **How can groups from all sides of the spectrum work to address the issues of climate change?**

8 - Centuries of Western development have been underpinned by the idea of progress -- that things will continue to improve over time. And indeed in many respects things have improved. Yet some argue that this improvement has come from extracting finite resources such as fossil fuels from the Earth -- resources that will eventually run out. **In the future world, what will “progress” mean?**

9 - History has shown that very big changes in the human condition typically occur via the actions of ordinary people, one by one. **What can each of us do, individually, to address and adapt to the coming changes? How can any one person make a difference?**

FINAL QUESTION: So, in the end, do you have reason to be optimistic about the future of the Earth, and humanity’s place in it?