

A conversation with Seth Baum on 18 September 2013

Participants

- Seth Baum—Co-Founder and Executive Director of the Global Catastrophic Risk Institute
- Nick Beckstead—Research Fellow, Future of Humanity Institute at Oxford University; Board of Trustees, Centre for Effective Altruism
- Robert Wiblin—Executive Director, Centre for Effective Altruism

Summary

Purpose of the call: We organized this call to learn about government policies that Seth Baum believes may reduce global catastrophic risk (GCR), for the purpose of identifying areas for deeper investigation later.

Why this person: Seth is the Executive Director of a research institute that focuses on GCRs and we had an existing relationship with him.

We had a shallow and wide-ranging conversation about nuclear weapons, biological weapons, climate change, increasing the probability of eventual recovery in the event of a global catastrophe, emerging technology governance, and promoting research and awareness of GCRs.

Seth's expertise

Seth is the Executive Director of the Global Catastrophic Risk Institute and has some general knowledge about global catastrophic risk. He knows most about GCRs from climate change, emerging technology governance, increasing the probability of civilization's eventual recovery in the event of a global catastrophic event, and nuclear security (in roughly that order). He feels he doesn't have much knowledge about biological GCRs.

Nuclear weapons

People to talk to

For more information about nuclear weapons, Seth recommended speaking to

- Ward Wilson, Senior Fellow at the British American Security Information Council
- Benoit Peliopidas, Lecturer in International Relations at University of Bristol

Biological weapon GCRs

Seth offered that caveat that he doesn't personally know a great deal about GCRs from biological weapons.

Basics of GCRs from biological weapons

Seth believes it is unlikely that a state actor would create a biological pathogen as a weapon that would create a global catastrophic risk because such a pathogen would present substantial risks to themselves. Therefore, Seth believes non-state actors and accidents are more likely sources of GCRs from biological weapons.

Seth's impression is that it is hard to engineer a pathogen which could kill nearly all humans with current biotechnology. Doing so requires a particular combination of features--including a long incubation period, a high basic reproduction number, and a high mortality rate--which are hard to get all at once, though he emphasized that this should be confirmed by checking with experts.

Policy areas that could reduce biological GCRs

Seth suggested looking into disease surveillance and monitoring of/engagement with non-state actors.

People to talk to

- UPMC Center for Health Security
- Mark Smolinski, Director of Global Health Threats at Skoll Global Threats
- Larry Brilliant, President and CEO of Skoll Global Threats

Climate change GCRs

Potential as a GCR

Seth believes that the effective altruism community, and many mainstream researchers, underestimate the potential of climate change as a GCR. He emphasized that surprisingly bad scenarios with climate change could make a large portion of the uninhabitable for humans and make it hard for civilization to continue. A stable climate could have played an important role in developing civilization in the first place, so destabilizing the climate could potentially remove a precondition for civilization, though this is uncertain. Catastrophic climate change could also reduce resilience to other future catastrophic threats.

A lot of the climate change policy literature focuses on uncertainty about climate sensitivity (a measure of how changes in CO2 concentrations are related to temperature), but little focuses on how sensitive human civilization is to changes in climate. In his view, it's plausible that civilization could successfully adapt to significant temperature changes, but this hasn't been studied in detail. For now, how civilization would respond is highly uncertain.

National policies areas to reduce GCRs

- Carbon tax
- Programs to encourage emissions reducing behavior, including awareness, nudges, etc

- Divesting from coal
- Clean energy R&D
- Geoengineering research

We spoke about geoengineering more than the other areas. Seth emphasized that the main case for geoengineering research is in terms of creating an option that we can use if it becomes necessary.

Two areas of geoengineering research are computer simulations and small-scale experiments. Computer simulations are much less controversial, though still somewhat controversial, and Seth is in favor of more of it. The other area is very controversial, especially in light of a rogue experiment in this area. Seth doesn't have a strong opinion about whether the small scale experiments are worth advocating at this point, and would like to see more information about the potential risks and upsides of these experiments.

People to talk to

For clean energy R&D: Dave Denkenberger, energy efficiency engineer at Ecova and Research Associate at GCRI

Further reading

For further information about nudges to reduce risks from climate change, look at:

- Department for Environment, Food, and Rural Affairs. 2008. "[A Framework for Pro-Environmental Behaviors.](#)"

Increasing resilience to GCRs

By "GCR resilience" we and Seth mean "capacity for humanity to survive and recover from a global catastrophe."

There is a lot of work on resilience to smaller scale disasters, and some of it has relevance to GCR resilience. For example, FEMA (the US Federal Emergency Management Agency) has a project called the "Strategic Foresight Initiative." They are studying catastrophes that we could face in the future, on a scale of years to decades. Another example from FEMA is the 1998 report "Recovery from Nuclear Attack", available at:

http://www.defconwarningsystem.com/documents/recovery_from_nuclear_attack.pdf.

Policy ideas

- A speculative idea is that a government could create a detailed emergency plan to close its borders and become self-sufficient in the event of a global pandemic, if such plans do not already exist.
- Microgrid power for resilient electricity generation: Some global catastrophes could destroy the civil or physical infrastructure necessary to continue to operate the power grid. Seth believes this could make recovery less likely. Microgrid power systems could make the power system more resilient, which may increase the chance of eventual recovery. Seth emphasized that this is

just one of many micro-solutions that could help communities achieve self-sufficiency following a global catastrophe.

- Increase food storage. This could be helpful in many possible catastrophes, from nuclear winter to asteroid impacts.

People to talk to

- Dave Denkenberger, energy efficiency engineer at Ecova, Research Associate at GCRI. He did an [online lecture](#) at GCRI on the topic of food security in the event of a global catastrophe.
- For FEMA's Strategic Foresight Initiative: Destiny Aman, working on the Strategic Foresight Initiative at FEMA
- For microgrid power: Joshua Pearce, Associate Professor of Materials Science and Engineering and Electrical and Computer Engineering at Michigan Tech

Emerging technology governance

Policy areas

- Increase surveillance of non-state actors who may have access to future weapons of mass destruction, or other technologies that pose substantial risks from unintended consequences.
- Require research funded by the government to disclose aspects of the research that are risky and be subject to oversight. This should be done in a way that interferes with non-risky research as little as possible. Seth thinks this area could be important and politically feasible.

People to talk to

- Jennifer Kuzma, Professor at NCSU
- Grant Wilson, Deputy Director at GCRI
- Todd Kuiken, Wilson Center, Science and Technology Innovation Program
- Center for Law, Science, and Innovation at Arizona State University
- SynBerc
- Mark Saner, University of Ottawa Institute for Science, Society and Policy
- Miles Brundage, PhD student in Human and Social Dimensions of Science and Technology at Arizona State University

Promoting research and awareness of global catastrophic risk

Seth suggested organizing a high-level workshop with academics, technologists, and people in government to discuss GCRs and policy. He recommended the conferences of the Institute on Science for Global Policy as a possible model.

Questions discussed in this call

1. Where do you have expertise in GCR?

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2. In terms of potential value for reducing GCR, political feasibility, and tractability of further investigation, which policies do you see as potentially promising for researching and advocating to governments?