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Reaction Paper 3, Vulnerability, contestation, collaboration

In their article, Epstein and McCarthy discuss methods to assess climate stability. They discuss the likelihood that our recent 10,000 year of climatic stability may be ending, to be replaced by a period of cooling and shifting of regional climates. Traditionally, researchers measured amounts of change in indicators (GHG concentrations, for example). They advocate measuring not only the amount of change, but also the rate of change, magnitude and pattern of variance in temperature and precipitation, number of outliers, and several other measurements whose interactions together can be used to assess climate change.

Interesting in their discussion of outlier events, they state that in the past five years, extreme precipitation events and sequences of extremes have been responsible for "unprecedented" loss of life. Outliers are increasing in frequency. Although they discuss mostly climate-related changes, it would be interesting to see if their theory extrapolates to events such as earthquakes and tsunamis.

Epstein and McCarthy conclude that we have underestimated the rate at which Earth's climate would change, and the rate of biological systems response. If we continue current greenhouse gas emissions patterns, the climate will likely become increasingly (and possibly unpredictably) unstable. Changes to emissions must be made immediately if we are to alter climatic oscillations; however, even radical changes now may not prevent significant climate change.

Epstein's articles on climate change and subsequent change in vector-borne and water-borne disease were interesting. He stressed the effects of extreme weather events on human/public health, with good illustrations. He discusses current environmental change and the "30 new diseases in 20 years", combined with a redistribution of old diseases (especially diseases carried by mosquitoes). Climate change has indirect effects on human health also. Changes in animal disease patterns, habitat diversity, and pests/crop production effect us in numerous ways, further increasing the global burden of infections disease.

Epstein's strategies for combating changes in infectious disease center around surveillance and response systems, such as the Rift Valley fever remote sensing system. If subtle changes can be detected early, prevention or mitigation of effects is possible. He also advocates for the use of clean energy and decreasing greenhouse gas emission, to decrease the rate of global climate change.

The Walker/Leaning article also illustrated the increased frequency and magnitude of disasters. Of note, they report that only a fraction of aid promised is usually delivered to affected areas/populations. Although the UN often coordinates international disaster response, there is no "assessed" funding (as there is for peacekeeping missions, for example). Walker and Leaning suggest that part of relief funding should come from "assessed" contributions from States. They state that although the number of disasters and people affected by them has risen sharply, the number of deaths due to disasters has decreased, partially due to improved warning systems and planning. "Development is an investment in disaster mitigation"; there should be more emphasis on disaster proofing and rehabilitation.