Memo to the Community of Concerned Climate Scientists

I am a mathematician who brings systems thinking to questions of how we organize to produce results, and what outcomes different organization structures actually can or cannot produce. I've been following, and occasionally writing essays about, the global attempt to reduce carbon emissions and the discrepancies between goals and results.

I want to focus here on one such essay, called "Needed: Systems Thinking in Public Affairs", in which I describe two thought-experiment examples, each with a counterintuitive result: https://melconway.com/Home/pdf/UbiquitousConnectivity.pdf .

The essay's second example (pages 31-end) draws this conclusion about the growth of major public corporations:

> "The consensus in the public conversation, even among the most seriously concerned economists, is that growth has been, and remains, a choice. This consensus appears to be an error."

This result comes from an analysis that reveals that public corporations in large, stable, competitive markets (specifically, Big Oil) are compelled to grow. The reason is structural. Every major public corporation has a distinct proxy in each of two markets: one selling goods and one selling stock, and these two proxies are tightly coupled by a feedback loop governed by law and financial practice. In the absence of illegal corporate collusion, one corporation's failure to grow would cause a competitive response in the goods market that would lead to negative

financial consequences for that corporation's shareholders. The corporation's directors, as fiduciaries, cannot allow this.

Add to this the fact that many long-term capital investments (for example, airlines financing aircraft) are conditioned on long-term supply-chain assurances. The worldwide consequence:

> "The global fossil-fuel-adjacent sub-economy is in contractual deadlock. Downsizing it is not simply a matter of good intentions at scale."

With respect to the global effort to reduce fossil-fuel emissions, a lot of corporate behavior that has been attributed to greed is also a consequence of long-standing structures in our legal-economic system.

It's unrealistic to expect that in our lifetimes we are going to change our legal-economic systems sufficiently to renegotiate a worldwide interlocking network of long-term contracts. Of the parts that can be changed, perhaps some fractions of them are indeed being changed, and we are seeing the benefits of those changes. But that was the easy part. How much more than what is already projected can we expect, given the structural constraints I've described?

> The bottom line: The obstructions we have observed to the necessary reductions to greenhouse-gas emissions might indeed be dominated by cupidity and malice, but even if these obstructions were to disappear, the underlying structural characteristics of our legal-economic system would, in large part, deny us the desired outcome.

While there is every reason to keep trying, we should not expect radical departures from emission levels already being realistically projected.

What is to be done? I don't have an answer. But I have a suggestion for moving forward, one that I admit is a Hail Mary. If you've taken seriously what I've written above, you should look favorably on Hail Marys.

Here it is. The best we can expect is not a structural change, but some kind of a workaround, perhaps one that will slow emissions and buy us more time to engage in a larger-scale problem-solving effort, perhaps something completely different. Our job, then, is to maximize the opportunity for such a workaround to present itself.

At this time we have no idea what that workaround might look like. So our task then becomes: Create, and support, an effort that will maximize the likelihood that the workaround will be realized.

Five years ago I considered what such an effort would look like. The scheme is embodied in a thought experiment in this essay: https://melconway.com/Home/pdf/Consensus%20Model.pdf . This scheme is the theoretical work of a mathematician, one with a recognized track record of connecting theory and real-world results. I encourage you to give it serious consideration.

Caveats:

1. There is no assurance that such an effort will succeed. It's my view that, if success is possible, this approach will yield the best chance for it to appear.
2. Much of this approach will be difficult, given our social and academic reward systems:

    a. It will require a novel commitment from a widely skilled (but not large) and unusually patient group of exceptional people, many of whom might not be initially comfortable with others in the group and who (by necessity) will have widely different worldviews (see iWoKs, pages 2-5). Such people will be hard to find and enlist.

    b. If a chance of success appears, the group will be meeting intensely for a long period of time. The members must be incentivized and well provided for.

    c. There will be major questions of security, confidentiality, and public relations in a possibly hostile political environment.