Conclusions: A Personal Note

The prodigious scientific labors described in this website have brought to light an extraordinary fact. We, you and I, the people now active, are making the most consequential decisions in the entire history of the human race.

We know this because it is the sober conclusion of the scientific community, a result of deliberations over many years in the greatest collective inquiry project that has ever existed. Thousands of scientists around the world without serious dissent agree on what is happening, what is likely to happen, and what we can do about it.

Global warming is upon us. It is too late to avoid damage: the annual cost is already many billions of dollars and countless human lives, with worse to come. It is not too late to avoid catastrophe. But we have delayed so long that it will take a great effort, comparable to the effort of fighting a world war—only without the cost in lives and treasure. On the contrary, reducing greenhouse gas pollution will bring gains in prosperity and health for everyone but the very rich.

At present the world actually subsidizes fossil fuel and other emissions, costing taxpayers some half a trillion dollars a year in direct payments and perhaps five trillion in indirect expenses. Ending these payments would more than cover the cost of protecting our civilization.¹

The first step is cheap: research and development of advanced technologies (energy storage, pollution-free shipping, next-generation nuclear reactors... to solve our problem we need “all of the above”). The world’s governments could easily double this negligible fraction of their budgets. But we cannot wait for better technologies, and thanks to past research and subsidies for clean energy we have what we need to act now. Many of the actions will actually pay for themselves. For example, replacing coal-fired power plants with wind and solar facilities would immediately reduce the harm caused by coal smoke — some 10,000 premature deaths each year in the United States alone. Other policies could improve public transportation, protect forests, and so forth, with net benefits entirely aside from acting against global warming. We have done far too little of this, mainly because of the tremendous power for obstruction wielded by the

fossil fuel industries and their ideological allies. It’s not a scientific problem now, it’s a political problem.

The world’s emissions of greenhouse gases are rising. Yet the world’s scientists have explained that we need to get the emissions into a steep decline by the year 2030. Yes, that soon. What if we fail to turn this around? The greenhouse gases lingering in the atmosphere would lock in the warming. The policies we put in place in this decade will determine the state of the climate for the next 10,000 years.

Under current policies, by the time our little children reach retirement age the global average temperature will be... well, that’s a good question. The climate system is such a tangle of interactions that scientists have been able to state only broad limits. Suppose we put off serious action for another decade or so. Then if we are lucky, if the planet responds at the lower limit of what seems possible, we might be able to halt the rise with another 1°C of warming, which would put us 2°C above 19th-century temperatures. That would be a world with widespread devastation, but survivable as a civilization.

The scientists tell us, however, that if the climate system responds in the most likely way, current policies will bring a world 3°C warmer than our grandparents knew. The impacts such as dust bowls, flooding, and mass migration of refugees from regions where life became unsustainable, would make it very hard to maintain a prosperous and somewhat free civilization. Almost equally likely is a 4°C warmer world, where it would be problematic whether we could maintain any advanced civilization at all. There is a further possibility (one percent probability? ten percent? nobody knows) that even the 3°C warming would trigger rapid feedbacks that in the following century would push the global temperature rise to 5 or 6°C. On that planet there would be few regions in which a group of human beings could physically survive.

It is hard to grasp that there is a chance that the entire project of human civilization might come to nothing. It is almost as hard to grasp that as things stand now, the most likely legacy we leave our children is a 3°C world of weekly climate disasters, spoiled ecosystems, failed states, and desperate dictators armed with nuclear weapons. It is especially hard to admit that the entire responsibility rests on the people who are active in this decade: that everything depends on us, here, now. It’s as if we have woken up in a science-fiction movie. But it’s not fiction, it’s physics.

What can we do? Of course each of us should work to reduce greenhouse-gas emissions in our personal lives. But it is far more important to join with others to work within our communities at
all political levels. The global atmosphere is like a forest or an irrigation system or a fishery where individual users must be restrained from selfishly over-exploiting the resource to the detriment of all.

Field studies around the world have found principles of behavior that make for successful commons management. Similar principles are familiar in political science, and they are associated with republican governance. Underlying all successful republics are habits of respect for established law, and particularly respect for the rights of others; dedication to the commonwealth and to the common good; a search for consensus (decisions that may not entirely satisfy anyone but that everyone accepts as “good enough”), and where consensus cannot be reached, respect for decisions made by voting or other lawful mechanism. Groups that live by these rules have a long record of successful cooperation. In international negotiations, we can manage our common atmosphere if and only if there are enough nations that live by republican principles to chivy the rest into line.

So it is crucial to our success that we maintain republican principles in our domestic politics—and extend them. All categories of citizens must be drawn into the common effort, with effective help from all levels of government. If we do not make big changes in our economy and society, in how we live and how we govern ourselves, global warming will force far more radical changes upon us. In particular, we must restrain the influence of amoral corporations and extremely wealthy people, who have played a despicable role in blocking essential policies. To allow ever worse climate disruption would give those who already hold too much power opportunities to seize even more amid the chaos. The battle to preserve our climate is inseparable from the battle for democracy.

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2 See the online links page. Also Wynes and Nicholas (2017), a study of the actually most effective individual actions (have fewer children, use public transit, avoid air travel, eat less meat...).