



November 2022

High-Tech and High-Risk Contribution to GTI Forum [Which Future Are We Living In?](#)

Al Hammond

Reflecting on the [six scenarios](#) outlined in the 2002 [Great Transition essay](#), I would argue that we remain largely stuck in Conventional Worlds, despite growing signs of [Fortress World](#) and [Breakdown](#). In the US, the turn away from democracy by many of the leaders of the MAGA-Republicans shows the weakness or improbability of [Policy Reform](#). Globally, the growing tension between the US and its allies, on one side, and China, on the other, is partitioning and disrupting markets—dimming the promise of [Market Forces](#) world—while the threat of a major nuclear disaster in Ukraine brings Breakdown closer.

I am a student of science and technology, and while we live in a time of rapid innovation in both, it has proven a mixed blessing. In 2002, for example, the growing Internet seemed a plausible tool for the rise of a global social movement. But that potential has been undercut by the rise of social media and their algorithms that reinforce extreme views to grow both audience and profits; unless they can be done away with and personal privacy better protected, the Internet remains an increasingly invasive wasteland, and the way forward seems limited. Likewise, it is hard to imagine a policy regime that would subject corporate artificial intelligence (AI) software to independent assessment of its potential for social harm. (In China, the surveillance state is run by the government, not by the private sector, which seems even worse; India shows signs of following that pattern too.) Maybe the powerful computers we carry in our pockets (smart phones) will one day empower better individual and societal choices, but that future is not yet apparent.

The rapid progress in biotech offers hope of doing away with many kinds of illness—for those that can afford the therapies. And synthetic biology in particular could plausibly enhance global

food supplies, even replacing farming, ranching, and forestry (and their environmental pressures) to a considerable extent by producing their products in the lab. But we lack a policy mechanism to ensure that all populations can benefit from such innovations, or tax regimes to distribute the financial wealth new technologies create beyond a very small portion of the population.

Another set of rapidly advancing technologies are those for military purposes. Drones, hypersonic missiles that travel at five times the speed of sound, biological weapons (if Russia's threats are to be believed), AI-guided fighter jets, and battlefield management software—the world's armaments have gotten much deadlier since the end of the Cold War. And that means the human and economic costs of global war, should it occur, will be much greater. China is increasingly rattling its military might over Taiwan; the US, pledged to defend Taiwan, is also arming Japan and Australia. North Korea, and increasingly Russia, are nuclear-armed wild cards.

Beyond technological drivers, climate change will become an important stressor well before 2050. It will drive more heat waves, fires, and flooding, but also much more massive immigration (and attendant social disruption), with tens or hundreds of millions fleeing equatorial or other regions short of water or where agriculture is no longer possible. If higher-latitude regions such as the US, Canada, Northern Europe, and Japan prepared for and welcomed such influxes, it would offset their aging and declining populations and strengthen their economies, but the political will for that is not apparent.

It may well be that my pessimism is too influenced by old age; hopefully, younger generations will have both the motivation and the inspiration to find solutions.

About the Author



Al Hammond is a serial entrepreneur, a widely published author, and a pioneer in market-based solutions to poverty. He is co-founder and Executive VP for Strategy of Healthpoint Services, which delivers safe drinking water to rural and small town communities in India, and the former leader the Health for All program at Ashoka, a global network of social entrepreneurs. He has served as a consultant to the White House Office of Science and Technology Policy, US federal agencies, the United Nations, major corporations, and private foundations. He holds degrees from Stanford and Harvard Universities in engineering and applied mathematics.

About the Publication

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Cite as Al Hammond, "High-Tech and High-Risk," contribution to GTI Forum "Which Future Are We Living In?," *Great Transition Initiative* (November 2022), <https://greattransition.org/gti-forum/which-future-hammond>.

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