## DA – bioterror

#### Terrorism is gradually rising; Large terrorists groups are taking control worldwide.

Portfield 20 Carlie Portfield, 25 November 2020, <https://www.forbes.com/sites/carlieporterfield/2020/11/25/terrorism-deaths-decline-worldwide-but-far-right-attacks-are-on-the-rise/?sh=65556e673687>

While terrorism-related deaths have fallen for a fifth straight year, researchers at the Institute of Economics and Peace warn that far-right attacks are on the rise in many countries, up 250% over the past five years in North America, western Europe and Oceania.

According to the latest [Global Terrorism Index](https://www.visionofhumanity.org/wp-content/uploads/2020/11/GTI-2020-web-1.pdf), deaths from terrorism fell 59%, to 13,826 deaths in 2019, compared to five years before—however, it still remains a problem across the world, with 63 countries in 2019 recording at least one death from a terrorist attack, according to the report.

Some 96% of deaths occurred in countries with active conflicts, with Afghanistan, Iraq, Nigeria, Syria and Somalia being the hardest-hit nations.

However, the researchers noted far-right attacks are increasing in the West, where the number of such incidents hit 49 in 2019, compared to just one in 2010.

The study called the rise in terrorist attacks committed in the name of far-right politics “one of the [more worrying trends](https://www.visionofhumanity.org/wp-content/uploads/2020/11/GTI-2020-web-1.pdf) in the last five years,” though the number of incidents still remains lower than other types of terrorism.

#### Terrorist Groups are expressing interest in CRISPR technology; the AFF reducing patents would allow for more accessibility for the CRISPR weapons.

Acharya 17 Amrit P. Acharya, Arabinda Acharya, 1 June 2017, https://www.foreignaffairs.com/articles/world/2017-06-01/cyberterrorism-and-biotechnology

For years, the international community has grappled with the threat of chemical, biological, radiological, and nuclear terrorism. And although al Qaeda and [the Islamic State (ISIS)](https://www.foreignaffairs.com/tags/isis) have demonstrated interest in and some capability to develop and use such weapons, there have been no successful mass casualty terrorist attacks involving them. Attempted attacks involving radiological dispersal devices or chemical and biological means have either failed or had a very limited impact. Experts such as [John Parachini](http://www.tandfonline.com/doi/abs/10.1162/016366003322387091), [Jeffrey Bale and Gary Ackerman](https://www.amazon.com/WMD-Terrorism-Science-Policy-Choices/dp/B008SMIO5A/ref=sr_1_2?s=books&ie=UTF8&qid=1496247705&sr=1-2&keywords=WMD+Terrorism%3A+Science+and+Policy+Choices), [Adam Dolnik](https://www.amazon.com/Understanding-Terrorist-Innovation-Technology-Tactics/dp/0415545161), and [Rajesh Basrur and Mallika Joseph](http://www.centrovolta.it/landau/content/binary/Basrur-Mallika%20S.A.%20case%20study%202007%20revised.pdf) argue that the reason is terrorists’ inability to weaponize chemical, biological, radiological, or nuclear material. Others, including Brian Michael Jenkins, believe that the [lack of mass causality attacks](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjCm7_oxJrUAhXrxYMKHWrvDlEQFggoMAA&url=http%3A%2F%2Fwww.rand.org%2Fcontent%2Fdam%2Frand%2Fpubs%2Fmonographs%2F2006%2FRAND_MG454.pdf&usg=AFQjCNEmUWLBJzpz5G1ieoUMLghqTp) also has to do with self-restraint: perpetrators might not be able to control the consequences of such an attack. It could end up harming the members of the communities that the terrorists are purportedly fighting for [and could therefore be counterproductive](https://www.amazon.com/Ten-Years-After-Rethinking-Routledge/dp/0415625874).

#### CRISPR can be used for bioterror weapons. This cannot happen in the SQuo right now, but the passage of the Aff can allow for this.

Revill 17 James Revill, 31 August 2017, <https://phys.org/news/2017-08-crispr-biological-weapon.html>,

Concerns are also mounting that gene editing could be used in the development of biological weapons. In 2016, [Bill Gates remarked](https://www.theguardian.com/technology/2017/feb/18/bill-gates-warns-tens-of-millions-could-be-killed-by-bio-terrorism) that "the next epidemic could originate on the computer screen of a terrorist intent on using genetic engineering to create a synthetic version of the smallpox virus". More recently, in July 2017, John Sotos, of Intel Health & Life Sciences, stated that [gene editing](https://phys.org/tags/gene+editing/) research could "[open up the potential for bioweapons of unimaginable destructive potential](https://www.theguardian.com/science/2017/jul/31/bioweapons-cancer-moonshot-gene-editing)".

An annual [worldwide threat assessment report](https://www.technologyreview.com/s/600774/top-us-intelligence-official-calls-gene-editing-a-wmd-threat/) of the US intelligence community in February 2016 argued that the broad availability and low cost of the basic ingredients of technologies like CRISPR makes it particularly concerning.

However, one has to be careful with the hype surrounding new technologies and, at present, the security implications of CRISPR are [probably modest](https://www.labor-spiez.ch/pdf/en/Report_on_the_second_workshop-5-9_September_2016.pdf). There are easier, cruder methods of creating terror. CRISPR would only get aspiring biological terrorists so far. Other steps, such as growing and disseminating biological weapons agents, would typically be required for it to become an effective [weapon](https://phys.org/tags/weapon/). This would require additional skills and places CRISPR-based biological weapons beyond the reach of most terrorist groups. At least for the time being

This does not mean that the hostile exploitation of CRISPR by non-state actors can be ignored. Nor can one [can] ignore the [likely role](https://www.labor-spiez.ch/pdf/en/Report_on_the_second_workshop-5-9_September_2016.pdf) of CRISPR in any future state biological weapons programme.

#### Bioterror leads to extinction

Walsh 20--Bryan Walsh, Bryan Walsh is the Future Correspondent for Axios. He coverse merging technology and the trends shaping geopolitics, work, warfare and more. "The coronavirus pandemic reawakens bioweapon fears," Axios, 5-14-2020,[https://www.axios.com/coronavirus](https://www.dropbox.com/referrer_cleansing_redirect?hmac=KwT0YysdBXmZwDniIilUboNpJFpFTUZ3ONTrejPg5rs%3D&url=https%3A%2F%2Fwww.axios.com%2Fcoronavirus)-pandemic-pathogen-bioweapon-45417c86-52aa-41b1-8a99-44a6e597d3a8.html, accessed 9-7-2020]

The coronavirus pandemic reawakens bioweapon fears The immense human and economic toll of the COVID-19 pandemic only underscores the threat posed by pathogens that could be deliberately engineered and released. Why it matters: New technology like gene editing and DNA synthesis has made the creation of more virulent pathogens easier. Yet security and regulation efforts haven't kept pace with the science. What's happening: Despite some claims by the White House, overwhelming scientific evidence indicates that the novel coronavirus was not accidentally released from a lab or deliberately engineered, but naturally spilled over from an animal source. That doesn't mean the threat from bioweapons isn't dire. Along with AI, engineered pandemics are widely considered the biggest existential risk facing humanity. That's in part because a pathogen could be engineered in a lab for maximum contagiousness and virulence, well beyond what would arise through natural selection. Case in point: a 2018 pandemics emulation put on by the Johns Hopkins Center for Health Security featured a fictional engineered virus called Clade X that combined the contagiousness of the common cold with the virulence of the real-life Nipah virus, which has a mortality rate of 40-75%. The resulting simulated global outbreak killed 150 million people. COVID-19 isn't anywhere near that fatal, but the pandemic has shown the vulnerability of the U.S. and the world to biological threats both natural and manmade. "Potential adversaries are of course seeing the same things we’re seeing," says Richard Pilch of the Middlebury Institute of International Studies. "Anyone looking for a radical leveling approach—whether a state actor like North Korea or a motivated terrorist organization—may be influenced by COVID-19toconsiderpursuing a biological weapons capability. "Background: Bioweapons were officially banned by the Biological Weapons Convention in 1975, though North Korea is suspected of maintaining an offensive bioweapons program. A particular concern about biowarfare and bioterror, though, is that many of the tools and methods that could be used to create a weaponized virus are largely indistinguishable from those used in the course of legitimate scientific research. This makes biotechnology "dual-use"—and that much more difficult to safely regulate without cutting off research that could be vitally important. While earlier bioweapons fears focused on the possibility that a state or terror group could try to weaponize a known dangerous agent like smallpox—which would require somehow obtaining restricted pathogens—new technology means that someone could obtain the genetic sequence of a germ online and synthesize it in the lab. "If you've been trained in a relevant technical discipline, that means you can make almost any potentially harmful agent that you're aware of," says Kevin Esvelt, a biologist at the MIT Media Lab and a member of the CDC's Biological Agent Containment Working Group. That would include the novel coronavirus that causes COVID-19, which was recently synthesized from its genetic sequence in a study published in Nature. How it works: Currently, synthetic DNA is ordered through commercial suppliers. But while most suppliers screen DNA orders for the sequences of dangerous pathogens, they're not required to—and not all do, which means safety efforts are "incomplete ,inaccurate, and insecure," says Esvelt. Screening efforts that look for the genetic sequences of known pathogens also wouldn't necessarily be able to detect when synthetic DNA was being used to make something entirely novel and dangerous. In the near future, desktop DNA synthesizers maybe able to generate synthetic DNA in the lab, cutting out the need for commercial suppliers—and potential security screenings.The democratization of biotechnology could unleash a wave of creativity and innovation, just as the democratization of personal computing did. But it also increases the number of people who could potentially make a dangerous engineered virus, whether deliberately.

## DA- Trade

#### Global Trade is set to increase after the COVID economic crash, then reach a stable level.

WTO 21 WTO, 3/31/21. <https://www.wto.org/english/news_e/pres21_e/pr876_e.htm>

Prospects for a quick recovery in world trade have improved as merchandise trade expanded more rapidly than expected in the second half of last year. According to new estimates from the WTO, the volume of world merchandise trade is expected to increase by 8.0% in 2021 after having fallen 5.3% in 2020, continuing its rebound from the pandemic-induced collapse that bottomed out in the second quarter of last year.

Trade growth should then slow to 4.0% in 2022, and the effects of the pandemic will continue to be felt as this pace of expansion would still leave trade below its pre-pandemic trend.

#### Lowering IPPS destabilizes trade by lowering Foreign Direct Investment.

Ezell and Cory 19 Stephen Ezell (vice president of global innovation policy at the Information Technology and Innovation Foundation; founder of Peer Insight, an innovation research and consulting firm) and Nigel Cory (associate director covering trade policy at the Information Technology and Innovation Foundation; formerly a researcher in the South‑ east Asia Program at the Center for Strategic and International Studies and worked for eight years in Australia’s Department of Foreign Affairs and Trade). “The Way For‑ ward for Intellectual Property Internationally.” Information Technology & Innovation Foundation. 25 April 2019. JDN. https://itif.org/publications/2019/04/25/way‑forward‑ intellectual‑property‑internationally

A wealth of academic research has documented the relationship between the strength of a country’s intellectual property protections and the extent of trade, foreign direct investment, and technology transfer it enjoys.

FDI = FOREIGN DIRECT INVESTMENT

Strengthening IPR protection has been shown to correlate with increased trade.27 For instance, Fink and Primo Braga found that IPR protection is positively associated with international trade flows, in particular of manufactured, non‑fuel imports.28 Other stud‑ ies have found a positive association between IPR protection and trade flows in high‑ technology products.29 Likewise, strengthening of IPR protection has also been connected with increased inflows of FDI. Cavazos Cepeda et al. found that a 1 percent in‑ crease in the protection of IPRs as measured by the Patent Rights Index (a measure of the strength of countries’ IPR regimes) is associated with a 2.8 percent increase in the inflow of FDI.30 Similarly, a 1 percent increase in trademark protection levels is associ‑ ated with a 3.8 percent increase in incoming FDI; and a 1 percent increase in copyright protection yields a 6.8 percent increase in FDI.31 Moreover, the researchers identified a virtuous cycle between FDI and protection of IP, whereby improvements in the IPR environment are associated with improved economic performance—in particular with respect to FDI—and, in turn, further improvements in the IPR environment. Park and Lippoldt showed that stronger IPRs in developing countries are associated with an in‑ crease of technology‑intensive FDI, while Awokuse and Yin provided a concrete example concerning the relationship of IPR protection in China to FDI inflows, concluding that IPR reforms in China have had a positive and significant effect on inbound FDI.32 154 7 Negative Evidence There is also evidence that countries with similar levels of intellectual property protection trade more with one another.33

Academic research also signals a strong correlation between IPR and technology trans‑ fer. Lippoldt showed that IPR strengthening in countries—particularly with respect to patents—is associated with increased technology transfer via trade and investment.34 Research has revealed that a country’s level of intellectual property protection considerably affects whether foreign firms will transfer technology into it.35 That matters be‑ cause the welfare gains from the importation of technology via innovative products, while differing across countries, can be substantial.36 For instance, foreign sources of technology account for over 90 percent of domestic productivity growth in all but a handful of countries.37 The research on this matter is clear and consistent. For example, a 1986 United Nations Conference on Trade and Development (UNCTAD) study found that direct investment in new technology areas such as computer software, semiconductors, and biotechnology is supported by stronger intellectual property rights policy regimes.38 (However, as this report later clarifies, subsequent UNCTAD reports have lamentably taken a more skeptical view toward IP.) A 1989 study by the United Na‑ tions Commission on Transnational Corporations (UNCTC) found that weak IP rights reduce computer software direct investment; and a 1990 study by UNCTC found that weak IP rights reduce pharmaceutical investment.39 Mansfield conducted firm‑level surveys and found that perceptions of strong IP rights abroad have a positive effect on incentives to transfer technologies abroad. Likewise, survey research by the World Bank’s International Finance Corporation found that, with variations by sector, country, and technology, at least 25 percent of American and Japanese high‑tech firms refuse to directly invest, or enter into a joint venture, in developing countries with weak intellectual property rights; and a later study confirmed those survey findings with actual foreign direct investment data.40 And an Institute for International Economics study of World Bank data concluded that weak intellectual property rights reduce flows of all these commercial activities, regardless of nations’ levels of economic development.41

#### The effects of an Unstable Trade Market lead to domestic focus, leading to trade protectionism.

Chen 21 James Chen, 27 July 2021, https://www.investopedia.com/terms/t/trade-war.asp

 trade war happens when one country retaliates against another by raising import [tariffs](https://www.investopedia.com/terms/t/tariff.asp) or placing other restrictions on the other country's imports.

Trade wars can commence if one country perceives that a competitor nation has unfair trading practices. Domestic trade unions or industry lobbyists can pressure politicians to make imported goods less attractive to consumers, pushing international policy toward a trade war. Also, trade wars are often a result of a misunderstanding of the widespread benefits of [free trade](https://www.investopedia.com/terms/f/free-trade.asp).

KEY TAKEAWAYS

* A trade war occurs when one country retaliates against another by raising import tariffs or placing other restrictions on the other country's imports.
* Trade wars are a side effect of protectionist policies and are controversial.
* Advocates say trade wars protect national interests and provide advantages to domestic businesses.
* Critics of trade wars claim they ultimately hurt local companies, consumers, and the economy.

Trade wars are usually considered a side effect of [protectionism](https://www.investopedia.com/terms/p/protectionism.asp). Protectionism refers to government actions and policies that restrict international trade. A country will generally undertake protectionist actions to shield domestic businesses and jobs from foreign competition. Protectionism is also a method used to balance [trade deficits](https://www.investopedia.com/terms/t/trade_deficit.asp). A trade deficit occurs when a country's imports exceed the amounts of its exports. A tariff is a tax or duty imposed on the goods imported into a nation. In a global economy, a trade war can become very damaging to the consumers and businesses of both nations, and the contagion can grow to affect many aspects of both economies.

A trade war that begins in one sector can grow to affect other sectors. Likewise, a trade war that begins between two countries can affect other countries not initially involved in the trade war. As noted above, this import "tit-for-tat" battle can result from a protectionist penchant.

A trade war is distinct from other actions taken to control imports and exports, such as sanctions. Instead, the trade war has detrimental effects on the trading relationship between two countries because its goals are related specifically to trade. Sanctions, for example, may also have philanthropic goals.

#### Trade Protectionism causes extinction

Pazner 8 (Michael J., Faculty – New York Institute of Finance, Financial Armageddon: Protect Your Future from Economic Collapse, p. 137-138)

The rise in isolationism and protectionism will bring about ever more heated arguments and dangerous confrontations over shared sources of oil, gas, and other key commodities as well as factors of production that must, out of necessity, be acquired from less-than-friendly nations. Whether involving raw materials used in strategic industries or basic necessities such as food, water, and energy, efforts to secure adequate supplies will take increasing precedence in a world where demand seems constantly out of kilter with supply. Disputes over the misuse, overuse, and pollution of the environment and natural resources will become more commonplace. Around the world, such tensions will give rise to full-scale military encounters, often with minimal provocation. In some instances, economic conditions will serve as a convenient pretext for conflicts that stem from cultural and religious differences. Alternatively, nations may look to divert attention away from domestic problems by channeling frustration and populist sentiment toward other countries and cultures. Enabled by cheap technology and the waning threat of American retribution, terrorist groups will likely boost the frequency and scale of their horrifying attacks, bringing the threat of random violence to a whole new level. Turbulent conditions will encourage aggressive saber rattling and interdictions by rogue nations running amok. Age-old clashes will also take on a new, more heated sense of urgency. China will likely assume an increasingly belligerent posture toward Taiwan, while Iran may embark on overt colonization of its neighbors in the Mideast. Israel, for its part, may look to draw a dwindling list of allies from around the world into a growing number of conflicts. Some observers, like John Mearsheimer, a political scientists at the University of Chicago, have even speculated that an “intense confrontation” between the United States and China is “inevitable” at some point. More than a few disputes will turn out to be almost wholly ideological. Growing cultural and religious differences will be transformed from wars of words to battles soaked in blood. Long-simmering resentments could also degenerate quickly, spurring the basest of human instincts and triggering genocidal acts. Terrorists employing biological or nuclear weapons will vie with conventional forces using jets, cruise missiles, and bunker-busting bombs to cause widespread destruction. Many will interpret stepped-up conflicts between Muslims and Western societies as the beginnings of a new world war.

## DA – EG

#### IPP’s are key to economic growth;

Ezell and Cory 19 Stephen Ezell (vice president of global innovation policy at the Information Technol‑ ogy and Innovation Foundation; founder of Peer Insight, an innovation research and consulting firm) and Nigel Cory (associate director covering trade policy at the Infor‑ mation Technology and Innovation Foundation; formerly a researcher in the South‑ east Asia Program at the Center for Strategic and International Studies and worked for eight years in Australia’s Department of Foreign Affairs and Trade). “The Way For‑ ward for Intellectual Property Internationally.” Information Technology & Innovation Foundation. 25 April 2019. JDN. https://itif.org/publications/2019/04/25/way‑forward‑ intellectual‑property‑internationally

Intellectual property rights arrangements are well recognized, going back to the Middle Ages, as enabling innovators to earn the returns necessary to continue to innovate and promote the availability of leading‑edge technologies. Nobel laureate economist Douglas North, one of the foremost scholars of economic history, argues that the introduction of intellectual property rights had one of the most profound impacts on spurring economic growth in human history. North points out that average global economic growth rates for about one and a half millennia prior to the Industrial Revolution were essentially zero. Eighteenth‑century elites in England had practically the same per capita income as their counterparts in third‑century Rome.21 North has shown that the inflection point toward greater economic growth was the widespread development of patent systems in the 19th century.22 Gregory Clark, in his seminal book, Farewell to Alms: A Brief Economic History of the World, reached a similar conclusion that the introduction of IPRs was catalytic to turbo‑charging global economic growth.23 Robust intellectual property rights spur innovative activity by increasing the appropriability of the returns to innovation, enabling innovators to capture enough of the benefits of their own innovative activity to justify taking considerable risks. By raising the private rate of return closer to the social rate of return, intellectual property rights address the knowledge asset incentive problem, allowing inventors to realize economic gain from their inventions, thereby catalyzing investment in knowledge creation. If innovators know that most of the benefits from their innovations would go to others without compensation, they would be much less likely and capable of engaging in future innovations. In addition, as they capture a larger portion of the benefits of their innovative activity, innovating companies obtain the resources to pursue the next generation of innovative activities. IP thus produces a number of positive benefits, including: 1) creating powerful incentives for domestic innovation; 2) inducing knowledge spillovers that help others to innovate; 3) ensuring a country’s companies can focus on operating productively and innovating, instead of having to devote an undue amount of their time and resources to protecting their IP in an environment where it’s at risk; 4) promoting the international diffusion of technology, innovation, and knowhow; and 5) boosting a country’s levels of research and development, inbound foreign direct investment (FDI), and exports of goods and services.2

#### Economic Growth is key to help solve for Climate Change

Bailey 15 -- Ronald Bailey, November 20 2015, https://www.scientificamerican.com/article/fast-growth-can-solve-climate-change/

As representatives from 196 countries gather in Paris this December to negotiate a universal climate treaty, they should keep in mind that richer is more climate-friendly, especially for developing countries. Why? Because faster growth means higher incomes, which correlate with lower population growth. Greater wealth also means higher agricultural productivity, freeing up land for forests to grow as well as speedier progress toward developing and deploying cheaper non–fossil fuel energy technologies. These trends can act synergistically to ameliorate man-made climate change.

As economic growth increases incomes, [fertility tends to fall](http://www.bit.ly/K8QAde) toward, and even below, the replacement rate of 2.1 children per woman. Some [demographers argue](http://www.nytimes.com/2013/09/21/business/uns-forecast-of-population-growth-may-be-too-high.html) that world population could peak at around nine billion by the middle of this century and then begin declining. Lower population growth means less demand for energy and other resources than there would otherwise have been. According to the latest [World Bank data](http://data.worldbank.org/indicator/SP.DYN.TFRT.IN) on 212 national jurisdictions, 85 countries are currently at or below the replacement rate, including Japan, China, Russia, Brazil the U.S. and all of Europe. Total fertility rates in large developing countries like India, Bangladesh and Mexico are also near the replacement rate.

Economic development initially worsens environmental externalities such as deforestation and pollution, including the accumulation of climate-damaging greenhouse gases in the atmosphere and oceans. But long term, pollution and deforestation can [start to improve](http://ceser.in/ceserp/index.php/ijees/article/view/1935) as economic growth boosts the incomes of once poor people. The wealthier people can become the more they [demand and get improved environmental quality](http://www.nber.org/papers/w4634) via regulation and market mechanisms that promote cleaner and less resource-intensive processes and technologies.

#### Warming causes extinction

David Spratt 19, Research Director for Breakthrough National Centre for Climate Restoration, Ian Dunlop, member of the Club of Rome, formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, May 2019, “Existential climate-related security risk: A scenario approach,” https://docs.wixstatic.com/ugd/148cb0\_b2c0c79dc4344b279bcf2365336ff23b.pdf

An **existential risk** to civilisation is one posing permanent large negative consequences to humanity which **may** never **be** undone, either **annihilating intelligent life** or permanently and drastically curtailing its potential. With the **commitments** by nations **to** the 2015 **Paris** Agreement, the current path of warming is 3°C or more by 2100. But this figure **do**es **not include “long-term” carbon-cycle feedbacks, which are** materially relevant now and in the near future due to the **unprecedented** rate at which human activity is perturbing the climate system. Taking these into account, the Paris path would lead to around 5°C of warming by 2100. Scientists warn that warming of **4°**C is incompatible with an organised global community, **is devastating to** the majority of **ecosystems**, and has a **high probability of** not **being** stable. The World Bank says it may be “**beyond adaptation**”. But an existential threat may also exist for many peoples and regions at a significantly lower level of warming. In 2017, 3°C of warming was categorised as “catastrophic” with a warning that, on a path of unchecked emissions, low-probability, high-**impact** warming **could be catastrophic by 2050**. The Emeritus Director of the Potsdam Institute, Prof. Hans Joachim Schellnhuber, warns that “climate change is now reaching the end-game, where very soon humanity must choose between taking unprecedented action, or accepting that it has been left too late and bear the consequences.” He says that if we continue down the present path “there is a very big risk that we **will** just **end** our **civilisation**. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years.”11 Unfortunately, conventional risk and probability analysis becomes useless in these circumstances because it excludes the full implications of outlier events and possibilities lurking at the fringes.12 Prudent risk-management means a tough, objective look at the real risks to which we are exposed, especially at those **“fat-tail” events**, which may have consequences that are damaging beyond quantification, and **threaten** the **survival** of human civilisation. Global warming projections display a “fat-tailed” distribution **with a greater likelihood of warming** that is well **in excess of** the **average amount** of warming **predicted by** climate **models**, and are of a higher probability than would be expected under typical statistical assumptions. More importantly, the risk lies disproportionately in the “fat-tail” outcomes, as illustrated in Figure 1.