# NC

## 1

#### The aff’s positioning of competition as intrinsic good acts to maintain the stability of capital accumulation.

* AT: Capitalism is when monopoly

Christophers 16 [Brett Christophers, Professor in the Department of Social and Economic Geography at Uppsala University, “The Great Leveler: Capitalism and Competition in the Court of Law,” 2016, Harvard University Press, pp. 8-15, EA]

The aforementioned argument that capitalism has historically migrated from a state of competitiveness to a state of monopoly or oligopoly is deficient in four primary respects, both empirical and conceptual in nature.

First, there is something deeply misleading about the either/or nature of this historical narrative. One of the most important—although rarely acknowledged—of Marx’s insights was that capitalism always, everywhere, requires both. It needs competition, assuredly, not least to drive technological innovation and the reinvestment of profits, and thus growth. But it also needs monopoly—not merely to enhance visibility within and control over otherwise potentially chaotic business environments, but also to underwrite capitalist, market-based trade per se. Not for nothing does David Harvey argue, after Marx, that the “monopoly power of private property” is “both the beginning point and the end point of all capitalist activity.”20 For the legal institution of private property does confer monopoly: the exclusive power to dispose of said property as the owner alone sees fit.

Capital’s seemingly paradoxical need for both competition and monopoly is explored in Chapter 1, which extracts from Marx a conceptualization of capitalism that critically informs the remainder of the book: that of capitalism always, necessarily, teetering on a knife edge, balanced precariously between the contradictory forces of competition and monopoly, and perennially in danger of lapsing too far to one side or the other. “The problem,” Harvey shrewdly observes, “is to keep economic relations competitive enough while sustaining the individual and class monopoly privileges of private property that are the foundation of capitalism as a political-economic system.”21

And it is here that our economic laws crucially enter the picture. In metaphorical terms, the law acts as a powerful leveler: a pincer of sorts on the critical, combustible nexus of monopoly and competition, applicable from one side of the knife edge, the other, or both. Antitrust (competition) law, meaningfully enforced, serves to constrain monopoly power where it coheres too readily, thus boosting competition; IP law acts from the other side, allowing a degree of monopoly power where none “naturally” coheres, and limiting competition in the process. This conceptualization of economic law is sketched out in Chapter 3. Together, such laws help to ensure that over the long term, market-based capitalism is not too competitive (driving down prices and profits) but, in Harvey’s terms, remains competitive enough (avoiding stagnation and rent-seeking). In the process, the laws in question historically have contributed substantially to keeping capitalist accumulation regimes broadly in balance.

At the pivot of this overall mechanism sits the phenomenon of profit. Following the lead of scholars such as Robert Brenner, this book places front and center the relationship between profitability and the interrelated dynamics of competition and monopoly.22 As, indeed, did the classicals: Profit rates were, as Chapter 1 will show, fundamental to their theorization of competition. But it is vital to recognize, as writers such as Keith Cowling have done, that this relationship does not assume a simplistic less-competition-means-more-profit form, isolated as it were from other contributory factors.23 Indeed, the book shows that excesses neither of competitive intensity nor of monopoly power support long-term stability of profit-making and accumulation.

Instead, it leans more toward the type of argument proffered by Gérard Duménil and Dominique Lévy, which is that the dynamics of profitability strongly influence the state’s attempts to regularize regimes of accumulation, and that stabilizing capitalism is thus in no small part a question, ultimately, of stabilizing profitability.24 Or, as David Gordon and coauthors have written, the reproduction of capitalism is “fundamentally conditioned by the level and stability of capitalist profitability. As profits go, in short, so goes the economy.”25 The book’s particular slant on such conceptions is to consider corporate profits more in relative than absolute terms—and relative to, especially, labor and wages. While a comparable focus has recently been adopted by Thomas Piketty in his much discussed Capital in the Twenty-First Century, the inspiration underlying the approach taken here lies much further back in time, in the work in particular of Michal Kalecki.26 For as Kalecki showed both historically and conceptually, the relation of capital with labor, and profit with wages, is centrally implicated in the monopoly-competition relation and the balance that capitalism requires of it. Kalecki, it is fair to say, would have had some very interesting things to say about the Apple wage-suppression antitrust lawsuit.

A second and related problem with the linear historical narrative of from-competition-to-monopoly is its positing of monopoly and competition not only as mutually exclusive alternatives, but as separable ones. Once more, we can turn to Marx for an effective disabusal of this figuring. Monopoly and competition, he argued, are much more closely related, and much more closely connected, than is typically recognized. “Monopoly produces competition, competition produces monopoly,” he maintained, somewhat aphoristically, in a letter he wrote to Pavel Annenkov in 1846.27 Capital not only requires both but is in fact the expression, inter alia, of their synthesis—a synthesis that Marx, in trademark dialectical fashion, described not as a “formula” but as a “movement,” specifically “the movement whereby a true balance is maintained between competition and monopoly.”28 Such movement comprises opposing but connected economic dynamics of centralization and decentralization. When one or the other dynamic becomes disproportionately powerful, Marx argues, the “counteracting tendency” kicks in to return capital to a balanced configuration of monopoly and competition.

This balanced organization of productive forces—always inherently unstable and always prone to knife-edge slippages—is very close to what Edward Chamberlin would later call “monopolistic competition.”29 Such monopolistic competition internalizes monopoly and competition in dialectical relation with one another and is the capitalist norm—and always has been. “The notion of a bygone ‘competitive’ stage of capitalism where firms were price-takers is,” as Duménil and Lévy insist, “a fiction derived from the neoclassical analytical apparatus.”30 Equally fictional, albeit a fiction usually emanating from a very different analytical source, is the notion of a contemporary “monopoly” stage of capitalism absent meaningful competition.31

The historical, U.S.- and U.K.-based narrative related in this book therefore turns on precisely this dialectical, restless synthesis of monopoly and competition, and its ever-evolving, historically and geographically specific forms. In recent years, it is Harvey who has provided the most provocative reading of this dialectic and of its centrality to capitalism. It is, Harvey argues, one of numerous “moving” contradictions that plague the capital form, and with which capital constantly wrestles as it enters into and out of crisis.32 Harvey repeats Marx’s observation that capital requires a balance of competitive and monopolistic forces. He then derives from this postulate the propositions that crisis occurs when such forces become imbalanced—although this is not the only cause of crisis—and that such crisis can only be “fixed” once balance is restored. The result is that capital historically “oscillates” between relative excesses of monopoly and competition, always finding balance hard to achieve, let alone sustain.33 Understanding capital and its historical development in this particular regard, Harvey insists, requires us to recognize “how successful capital has generally been in managing the contradictions between monopoly and competition” and that “it uses crises to do so.”34

Such success, and the role played by crises or by threats thereof, are two of this book’s central, recurring themes. However, Harvey’s framing raises two vital questions that he fails, in his admittedly brief account of monopoly and competition, to answer.

First, how has this success been achieved? “Capital,” Harvey writes, “has organically arrived at a way to balance and rebalance the tendencies towards a monopolistic centralisation and decentralised competition through the crises that arise out of its imbalances.”35 Again, there is no objection here, except to press: “organically,” how? This book fashions an answer. This answer rests on the role of the law. When capital has become sufficiently overcentralized and monopolistic to threaten its own successful, profitable reproduction, antitrust law has been called upon to help restore the necessary degree of balance. This balance will never be perfect and at rest; in a dialectical relation, such as that between monopoly and competition, it never can be. When the dangerous excess has been of competition, by contrast, IP law has come to the rescue. Such laws, needless to say, have not effected this work of rebalancing by themselves, and this book documents their interaction with other pertinent dynamics; but their role has been paramount.

The other problematic question raised by Harvey’s framing brings us directly to our third point of divergence with the Baran and Sweezy or Foster and McChesney reading of capitalist development. Consider here the agency behind the successful, crisis-based management and rebalancing of monopolistic and competitive forces envisioned by Harvey: “capital has been successful . . .”; “capital has arrived at . . .” But what, or who, is this capital, and has its form remained constant? For Harvey, clearly, capital is the capitalist class: those that own the means of production. Yet this singularization of responsibility for regulating and reregulating the core dynamics of the capitalist economy raises all manner of questions that Harvey fails to address. Is this capitalist class homogeneous? Does it share consistent objectives in terms of economic development and management? And even if it does (and of course, it does not), what is its relation with the state and with the different tools of economic regulation, the law among them, that the state uses to govern and shape economic conduct?

If Harvey’s stimulating propositions call for circumspection on account of their simplifying structural abstractions, the connection to the “monopoly capital” thesis is that it too tends to rely upon just such totalizing, even reified, concepts. “Monopoly capital” is itself one such. One of the consistent themes of the tradition renewed by The Endless Crisis—one extending back through Baran and Sweezy’s Monopoly Capital to Rudolf Hilferding’s Finance Capital (1910) and even Lenin’s Imperialism (1917)—is its tendency not only to associate potent monopoly powers with a new stage or phase of capitalism but to depict the latter in terms of a consciously regulated and (centrally) planned system in which market-based competition largely disappears from view.36 For Lenin, this system fused the interests of capital and state (state monopoly capitalism); for Hilferding the fusion was tripartite, with finance capital also integral. But Marx, for all the stereotypes to the contrary, never saw capitalism as such. It was a totality, to be sure, but one that needs to be continually reproduced and reconstituted. This process occurs in and through the disparate actions of government, workers, consumers, businesses, and so on; when such reconstitution occurs in ways that imperil accumulation, crisis looms.

The point of saying all this is not simply to oppugn a totalizing view of “monopoly capital,” but to contrast with it the approach taken in this book, particularly to the law and its mobilization. There is not, and has not been, a single hand on the tiller, for all the obvious importance of the state as the law’s formal originator; there is no single, homogeneous entity pulling the levers, so to speak, of political-economic regulation— no consistent regime of conscious, systematic control. As with other modalities of economic regulation or governance, the law, in practice, does not “work” like that.

For one thing, there is an important difference between the written law and its interpretation. Two courts can interpret and apply the same law or laws in markedly different ways and with very different consequences. Perhaps the clearest example of this, at least in this book (Chapter 6), concerns U.S. antitrust law in the second half of the twentieth century: The nature and degree of enforcement of this law underwent a dramatic transformation in the late 1970s and early 1980s, but the law itself did not materially change. Intellectual training, social and political context, even judicial personality: These variables, and more, all matter to the law’s practical materialization. As such, we must remain constantly alive to the simple fact that, as Peter Carstensen has put it, “court doctrine is not the whole of the law in practice.”37 Relatedly, much of the enforcement of IP rights occurs at a significant remove from courts—specifically in, as argued by William T. Gallagher, the everyday practices of IP owners and their lawyers, whose “negotiations” with alleged infringers take place largely in the “shadow” of IP law.38

For another thing, just as the state never enacts new economic laws in total isolation from the influence and interests of capital, so both capital(s) and state—and indeed other economic agents—use the law to their own ends, and these ends are far from necessarily commensurate. Think, once again, about our two Apple cases. Who, in each case, instigated the legal action? Who put the law to work in their own interests? In the IP case it was Apple itself. In the class-action suit it was labor. But the latter suit was in fact itself based upon a prior government investigation launched by the Department of Justice’s Antitrust Division in 2010.39 Three legal cases, then, all driven by different actors with different motivations, but all revolving around the same political-economic locus: the knotty complex of profit generation and accumulation constituted by Apple Inc. And if the law, together with its agents, is so palpably nonsingular at the scale of the political economy of just one company, on what reasonable grounds could we ever envision it thus—as a vehicle of conscious, unified control—in relation to the political economy of capitalism more widely? The “great leveler” indicated in the book’s title, in short, is not some omnipotent regulator in charge of the law; it is the law per se.

How, then, might we more accurately characterize the human and institutional agency analyzed in the following pages in relation to the law, its mobilization, and its political-economic effects? At a general level, the conclusion reached by Paul David in his examination of the history of IP law fits particularly well: “The complex body of law, judicial interpretation, and administrative practice that one has to grapple with in this field was not created by some rational, consistent, social welfare-maximizing public agency. What one is faced with, instead, is a mixture of the intended and unintended consequences of an undirected historical process on which the varied interests of many parties, acting at different points (some widely separated in time and space), have left an enduring mark.”40 More specifically, however, we will see that although IP and competition laws have indeed performed their work under the influence of varied individuals and groups, the vast majority of the latter are ultimately committed to, and institutionally invested in, the reproduction, in as smooth a fashion as possible, of capitalism in more or less its existing form. And even more specifically, the “smoothness” here alluded to means the reproduction of capitalism especially without the kinds of problems—identified in Chapter 3—that tend to emerge when the necessary balance between monopoly and competition is substantially disrupted.

On all the above grounds, therefore, this book’s argument diverges from that which we find in the all-too-common narrative of competitive capitalism historically segueing into monopoly capitalism. Of course, none of this is to suggest that nothing has changed historically in the capitalist constellation of monopoly-competition structures and dynamics. Far from it. But the book’s fourth and final quarrel with the conventional narrative is that what has substantively, perhaps irrevocably, changed is not the relative levels of competitive intensity and monopoly power—as in, that era had more competition, this one has more monopoly—so much as the source of monopoly powers and the degree of defensibility thereof.

Capitalism, this argument runs, is always characterized by competitive undercurrents; were it not, it would not be capitalism. Meanwhile, and arising partly out of these competitive dynamics (the Marxian argument), there is an endemic drive to fashion monopoly powers. Yet the means of assembly of such powers do not remain constant, and neither does the ability of monopolistic capitalists to defend the powers thus amassed. Capitalists—and indeed the states committed to stabilizing capitalism, with the law one obvious apparatus at their disposal—must constantly find new ways of putting monopoly in place and keeping it there. “As monopoly privileges from one source diminish,” Harvey observes, “so we witness a variety of attempts to preserve and assemble them by other means.”41 Mindful, thus, of Marx’s dictum that the monopoly-versus-competition dualism is a red herring that confuses a dialectical relation for an oppositional one, this book focuses instead on the ways in which the unstable balance between the two forces is maintained—and it posits the law as the primary, necessarily mutable, instrument of such maintenance.

#### The aff is co-opted by an agenda of “health diplomacy” that only further expands capitalist imperialism

Andrea Patanè 21. Marxist, Published: 15 May 2021. “COVID-19 pandemic: patents and profits” <https://www.marxist.com/covid-19-pandemic-patents-and-profits.htm> brett

Far from an act of ‘international solidarity', this latest move from the US government is a calculated political risk, and will be implemented in the interests of US imperialism. A section of the more serious wing of the bourgeoisie understands that a proper economic recovery can happen only if the pandemic is suppressed worldwide. As we have explained elsewhere, wealthy countries risk losing billions of dollars if the pandemic is brought under control only within their own borders, because new variants (like those in India and Brazil) can always mutate elsewhere and reinfect their populations, causing further economic disruption. Therefore, even on a capitalist basis, it is expedient in the long-term for the rich countries to facilitate a global vaccination campaign. Even Pope Francis anointed the demand from his seat in Rome! Biden’s announcement is also an act of vaccine diplomacy. America’s main rivals, China and Russia, have been shoring up their spheres of influence by distributing their Sinopharm and Sputnik V vaccines to poor countries left out by the vaccine nationalism of the US and Europe. Chinese and Russian vaccines have been exported into countries traditionally under western spheres of influence, including Brazil and Hungary. Pushing to waive IP protections on COVID-19 vaccines is therefore partly an effort to push back against the encroachment of rival imperialist powers, which have so far outcompeted Washington in the global vaccination drive. Biden’s announcement is also an attempt to restore the standing and authority of US imperialism on the world stage, which has been bruised by the ‘America First’ vaccine nationalist policy started by Donald Trump, and continued by Biden. According to the FT, Katherine Tai (top US trade envoy) and Jake Sullivan (national security adviser) made the case to Biden that pushing for the waiver “was a low-risk way to secure a diplomatic victory”, after coming under fire for not “respond[ing] quickly enough to the unfolding COVID-19 crisis in India”. Here you have it, straight from the horse’s mouth. Under capitalism, vaccines – rather than providing a way out of the pandemic – are tools for ‘low-risk diplomatic victories’. As if this was some sort of football match between world leaders! In short, Biden is stepping in to prioritise the interests of US imperialism as a whole over the immediate interests of the Big Pharma capitalists. But we should say clearly: this cynical attempt to claim the moral high ground came only after the US used its massive economic clout to secure enough vaccines to inoculate its own population several times over. And in fact, the wartime Defense Production Act is still in effect, which forces US manufacturers to fulfil domestic demands for medical equipment before exports are permitted. This de facto export ban has created bottlenecks in the supply chain that have already undermined the WHO-led COVAX programme to vaccinate poor countries. Rest assured, Biden’s policy remains ‘America First’, just by somewhat more calculated means than his predecessor.

#### Capitalism causes massive violence and inevitable extinction – the fundamental task is developing tools for organization and tactics to bring about revolution.

Escalante 19 [Alyson Escalante, M.A., Department of Philosophy @ University of Oregon, “Truth and Practice: The Marxist Theory of Knowledge,” 09/08/19, tinyurl.com/8jksnexs] pat

The world we live in today is in a dire state. Climate destruction continues at a fast pace, and every with every passing day, capitalism proves itself to be incapable of addressing this. Capitalist production and its endless drive for resources to match artificial market demands has created a climate crisis that leaves us on the brink of potential extinction.

Governments around the world are turning to far right and fascist leaders to assuage their fears of an uncertain future, and the most marginalized and oppressed suffer because of it. Fascism is on the rise, and history tells us very clearly what that can result in without opposition.

The decaying US empire continues to lash out in violence across the globe in a desperate attempt to re-assert its power and hegemony. Whole countries are destroyed in its desperate bids for more fossil fuels. The world burns from America’s white phosphorus weaponry.

The need for a revolutionary movement capable of replacing capitalism with something better has never been so clear. The choice between socialism or barbarism has never been so stark. More and more people are starting to realize that reform cannot save us, that capitalism and imperialism themselves are the problem, and that we must unite and band together to fight for a better world.

The question then is: how will we know what strategies, what tactics, and what ideas to unite around? If the skeptics and postmodernists are correct that knowledge is always relative and localized, then we cannot built a global and universal strategy to unite around. If they are correct then we are doomed to small acts of localized or individual resistance in the face of apocalypse. To embrace such a vision of the world (with its accompanying epistemological skepticism) is to embrace defeat.

The masses do not want to embrace defeat, they want to know how to fight back. Marxism can provide the tools necessary to engage in that fight.

Marxism, with its self criticism and its insistence on incorporating the valuable ideas of its critics has created a means for unifying workers across the globe with anti-colonial and anti-imperialist struggles. The Marxist belief in the possibility of true ideas, tested and verified in practice, creates the possibility for unity on a global scale. The scientific status of Marxism means that as our climate changes, as our world looks more and more grim, Marxism will adapt through struggle and practice; it will provide us with the ideas and tools we need to fight and win.

There will be no victory for the workers of the world without the ability to wield a revolutionary science. What is at stake in questions of Marxist epistemology is the very possibility of creating a philosophical and scientific basis for revolution. We must defend this possibility. We must defend the scientific status of Marxism, and must insist on the possibility of victory.

#### Vote neg to join the party – dual power organizing is the only path to revolutionary change.

Escalante ‘18

[Alyson, philosophy at U of Oregon. 08/24/2018. “Against Electoralism, For Dual Power!” <https://theforgenews.org/2018/08/24/against-electoralism-for-dual-power/>] pat

I am sure that at this point, the opportunists reading this have already begun to type out their typical objection: the world is different than it was in 1917, and the conditions of the United States in no way echo the conditions which enabled the Bolsheviks to achieve revolutionary success.

To this tried and true objection, there is one simple answer: you are entirely correct, and that is why we need to abandon electoralism and working within the bourgeois state.

What were the conditions which allowed the Bolsheviks to successfully revolt? The conditions were that of Dual Power. Alongside the capitalist state, there existed a whole set of institutions and councils which met the needs of the workers. The soviets, a parallel socialist government made up of individual councils, successfully took over many governmental responsibilities in some parts of Petrograd. In the radical Viborg district, the Bolshevik controlled soviets provided government services like mail, alongside programs that could meet the needs of workers. When a far right coup was attempted against the provisional government, it was troops loyal to the Bolshevik factions within the soviet who repelled the coup plotters, proving concretely to the workers of Petrograd that the socialists could not only provide for their needs, but also for their defense.

In short: the Bolsheviks recognized that instead of integrating into the bourgeois state, they could operate outside of it to build dual power. They could establish programs of elected representatives who would serve the workers. They would not bolster the capitalist state in the name of socialism, they would offer an alternative to it.

And so, when the time came for revolt, the masses were already to loyal to the Bolsheviks. The only party who had never compromised, who had denounced the unpopular imperialist wars, who had rejected the provisional government entirely, was the party who successfully gained the support of the workers.

And so, many of us on the more radical fringes of the socialist movement wonder why it is the the DSA and other socialist opportunists seem to think that we can win by bolstering the capitalist state? We wonder, given this powerful historical precedent, why they devote their energy to getting more Ocasios elected; what good does one more left democrat who will abandon the workers do for us?

The answer we receive in return is always the same: we want to win small changes that will make life for the workers easier; we want to protect food stamps and healthcare.

And do this, we reply: what makes you think reformism is the only way to do this. When the bourgeois state in California was happy to let black children go to school unfed, the Black Panthers didn’t rally around democratic candidates, they became militant and fed the children themselves. In the 40s and 50s, socialists in New York saw people going without healthcare and instead of rallying behind democratic candidates, they built the IWO to provide healthcare directly. Both these groups took up our pressing revolutionary task: building dual power.

Imagine if all those hours the DSA poured into electing Ocasio were instead used to feed the people of New York, to provide them with medical care, to ensure their needs were met. Imagine the masses seeing socialism not as a pipe dream we might achieve through electing more imperialists, but as a concrete movement which is currently meeting their needs?

The fact is, we are not nearly ready for revolution. Socialists in the United States have failed to meet the needs of the people, and as long as their only concrete interaction with the masses is handing them a voter registration form, they will continue to fail the people. Our task now is not to elect representatives to advocate for the people; it is much more gruelingly laborious than that. Our task is to serve the people. Our task is to build dual power.

The movement to do this is underway. Members of the DSA refoundation caucus have begun to move the left of the DSA in this direct, socialist groups like Philly Socialists have begun to build dual power through GED programs and tenants unions, many branches of the Party For Socialism and Liberation have begun to feed the people and provide for their concrete needs, and Red Guard collectives in Los Angeles have built serve the people programs and taken on a stance of militant resistance to gentrification. The movement is growing, its time is coming, and dual power is achievable within our life time.

The opportunists are, in a sense, correct. We are not where we were in 1917, but we can begin to move in that direction and dual power can take us there. In order to achieve dual power we have to recognize that Lenin was right: there will be no socialist gains by working within state institutions designed to crush socialism. Furthermore, we must recognize that the strategies of the electoral opportunists trade off with dual power. Electing candidates drains resources, time, and energy away from actually serving the people.

And so, we should commit to undertake the difficult and dangerous task of building dual power. We must reject opportunism, we must name the democratic party as our enemy, we must rally around power directly in the hands of the socialist movement. We do not have a parallel system of soviets in the United States. We can change that. Someday the cry “all power to the soviets” will be heard again. Lets make it happen.

#### We allow for innovation but better—our Marxist dictatorship still provides the incentive for innovating without the profit and productivity based mindset that pushes us to overconsumption and death. Lol no

Nieto 20 [Nieto, Maxi & Mateo Tomé, Juan. Maxi Nieto is a doctoral candidate at Universidad Miguel Hernández de Elche. Juan Mateo Tome is a professor at Complutense University of Madrid (2020). Dynamic Efficiency in a Planned Economy: Innovation and Entrepreneurship Without Markets. Science & Society. 84. 42-66. 10.1521/siso.2020.84.1.42. 8-28-2021 amrita]

4. Innovation and Entrepreneurship in a Planned Economy 4.1. Innovation and social property. **Innovation occurs as a result of a long and complex accumulation process of knowledge and creativity, where very rarely is a single individual solely responsible. This is an essentially social process in which a plurality of actors and institutions contribute in very different spheres and circumstances.** The Austrian School presents an idealized image of innovation in capitalist economies, attributing it exclusively to the figure of the enterprising entrepreneur — whether in a disruptive sense (Schumpeter), or in a strictly coordinating sense (Kirzner). In fact, the entrepreneurial function develops within specific institutional frameworks and organized structures, both at the micro and macro levels. In this sense, **a socialist economy has significant advantages for developing technological and business innovation, as opposed to a capitalist economy: i) socialism allows for greater and more efficient allocation of resources to R&D&I activities, thanks to centralized control of the surplus and the absence of sumptuous consumption and a rentier population; ii) there are no obstacles (property rights) to the free dissemination of new products and techniques; iii) the equal distribution of resources (which guarantees that no basic needs go unmet) allows for discovery and fuller development of talent, which likewise occurs when work is undertaken through tasks that are more balanced for the majority and less routine; iv) in allocating investment, more information is available and the criteria are more varied than mere expectation of profit; v) social ownership is more inclusive and participatory than capitalist enterprise in terms of generating and mobilizing knowledge (tacit or not) and encouraging innovation; vi) socialism does not impose short-term innovation cycles looking to generate products that can be commercialized in, say, four to six months, as is typical in capitalist economies.** Under these favorable general conditions, the development of innovation in a socialist economy would unfold in three fundamental areas: G4774.indd 59 11/26/2019 10:34:47 AM 60 SCIENCE & SOCIETY i) **Strategic planning: this traces the main lines of scientific, technological, and innovation research**. Here would enter programs for the development of new technologies and infrastructures, as well as visionary projects that explore eventualities and future scenarios. This sort of research is carried out in universities, scientific academies, technological institutes, and other specialized centers in coordination with the business world. The process would consist in testing different alternative productive projects or techniques in order to verify results, in connection with the companies and sectors being served. ii) **Companies: research, design, and innovation departments**. iii) **Business entrepreneurship: individuals and teams put forward proposals in hopes of securing financing.** For any of these three areas, material incentives would exist that reward the degree to which the freely programmed objectives are achieved, in addition to purely social or moral incentives such as social recognition or professional and personal fulfilment. In the next section, we focus on how socialist entrepreneurship — something that the Austrian School considers impossible — would ostensibly work.

# Case

### Innovation

#### Competitiveness is high and resilient

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Research1 shows advanced manufacturing is more essential than ever to economic competitiveness and prosperity. But what is involved in driving, sustaining, and applying the innovation that makes a company or country a leader in advanced manufacturing? In this post, I’ll explore the drivers that make the US a leader in innovation. Research and development (R&D) certainly plays a role, but the real key may be an intangible one: the innovation ecosystem. The US innovation ecosystem has evolved significantly over the last century, transitioning from business monopolies dominating R&D early last century, assertive government sponsorship mid-century, to the current environment, within a globally connected world, in which small and big businesses collaborate with universities, venture capitalists, and research institutions to drive the innovation ecosystem. Meanwhile, the technological focus of R&D has followed a similar arc, shifting from the creation of physical to digital products, to the more recent formation of new business models that combine the physical and digital worlds to create and capture new forms of value. With capital, intellectual property, and talent flowing across borders with limited constraints, the United States faces fundamental questions of great importance to the future of its innovation ecosystem: How can it best cultivate the potential of advanced technologies to spur competitiveness? Can the United States continue to lead given the research spend and talent within other nations? No one entity houses all the brightest people or best ideas – the answer lies with looking outside your traditional walls. Insights from our recent Advanced Technologies Initiative: Manufacturing and Innovation study indicated that, when it comes to tangible factors such as R&D spend, the United States is a clear leader. We spend more on R&D in raw dollars than any other nation.2 We account for about one-third of the globe’s R&D spending. In comparison, the next-largest share is China’s, at less than one-quarter of the global total. The other eight in the top 10 barely surpass the US share when all combined. This strong set of R&D capabilities reaches across many industries. In a recent global study3 that assessed R&D leadership in 10 top sectors, the United States was ranked number one for seven of those 10 sectors. But we may not stay in the lead for long. Other countries are ramping up their spending. Some with far smaller R&D footprints—like Japan and South Korea—already outpace us in two measures of R&D intensity: spend as a percentage of GDP and researchers per million inhabitants. As the graphic below shows, from 2000 through 2013, South Korea, China, and Taiwan dramatically expanded their R&D intensity in both respects, while the United States made little change over the same period. And what about the US’s global lead in raw-dollar R&D spending? Experts predict China is on a pace to pass us by 2019.4 China already focuses more of its R&D on commercializing new technologies, while the US focuses a significant core on basic and applied research.5 The “secret sauce” of innovation R&D spend alone isn’t a defensible advantage for the US. Other countries can—and do—increase their investments. And someday in the not too distant future they may very well surpass us. Does that mean we’ll lose our leadership? No. The enduring strength of US innovation, or of any nation’s capacity to invent, is more complicated than the number of dollars spent on R&D alone. What matters is the innovation ecosystem–the complex collaboration between private business, government, academia, finance, independent research, and other functions to bring new products and services to market. An effective innovation ecosystem marshals top talent, allows ideas to flow, and lowers barriers to breakthroughs. The US’ entrepreneurial spirit and substantial funding from venture capital firms are huge competitive advantages and key differentiators for the country. It remains the center for “disruptive innovation” thanks to its research infrastructure and low barriers to entrepreneurs and start-ups. It’s also more resilient with the sum being greater than the individual parts. That’s one of the hidden strengths of what the US brings to the challenge: Key stakeholders within our ecosystem have evolved over time to become less siloed and more collaborative. With the increasing pace of digitalization across the manufacturing industry, its innovation ecosystem has become a more closely connected system with stronger linkages between government, small business, big business, universities, venture capitalists, and research institutions that leverage and benefit from the deeper knowledge and connectivity between each other.

### Superbugs

#### AMR won’t risk extinction---squo solves, but the impact’s inevitable

Biba 17 – New York City–based freelance science journalist [Erin, 6/8/2017, “How we can stop antibiotic resistance”, BBC, <http://www.bbc.com/future/story/20170607-how-we-can-stop-antibiotic-resistance>] AMarb

First, the entire world needs to get on board. Two years ago this essentially happened when member states of the WHO agreed to accept a Global Action Plan – by then, antibiotic resistance was a problem that had already been on the radar for many decades. The plan lays out extensive solutions and best practices that all countries can take to reduce resistance. “That’s historic,” says Sprenger. Before then, he says, the only people actively discussing how to reduce resistance were people within medical circles, for the most part. "95% of the worldwide population is now living in a country where they have developed a national action plan. All these countries have increased activities in education, training, and prevention control.” In the last couple of decades we’ve seen decreases in prescription to children in the US – Dr Katherine Fleming-Dutra Then, last year, the UN addressed the issue before the General Assembly – only the fourth time in history that a health issue was discussed there. And just this May the G20 leaders signed a declaration on global health that included tackling antibiotic resistance. So it’s definitely a grand challenge that world leaders are taking seriously. Much of the WHO action plan focuses on hospital stewardship and supervision. The CDC is currently working closely with American hospitals to provide guidelines and education for the safe and reasonable prescription of antibiotics. “We have made some progress,” says Dr Katherine Fleming-Dutra, an epidemiologist at the CDC. “In the last couple of decades we’ve seen decreases in prescription to children in the US. We have seen less progress in adults. The rate in adults has been relatively stable.” Once hospitals and physicians get on board with reducing prescriptions the next step is to change regulations around agriculture. Ten years ago the European Union banned antibiotics as growth promoters. And just this January, the US Food and Drug Administration removed growth from the indicated use of antibiotics on drug labelling. According to Dr William Flynn, deputy director for science policy at FDA’s Center for Veterinary Medicine, “There was a real recognition that this was something [farmers] needed to take seriously and respond to. We’re encouraged by the fact that they were engaging and working with us to find ways to make it work.” But other countries need to follow suit – as evidenced by the recent revelations about antibiotic resistance coming out of China. One of the most important steps in tackling resistance is tracking it. The CDC have set up a system called the National Antimicrobial Monitoring System (NARMS). “Surveillance for antibiotic resistant bacteria is a big part of our mission,” says Dr Jean Patel, deputy director of the office of Antimicrobial Resistance at the CDC. “We do this to measure the burden of infection and also characterise the types of resistance we see. This helps us strategise how best to prevent resistance.” We can only really slow the development of resistance. We’re not going to stop it completely. Even appropriate use of antibiotics does contribute to resistance – Amanda Jezek, Vice President for Public Policy and Government Relations, Infectious Diseases Society of America The CDC funds state health departments around the US (and coordinates with laboratories worldwide) to maintain a network of antibiotic resistant bacteria data and samples. Says Patel: “We can use this to give us national estimates of infection rates to see how bacteria are changing, test new drugs against bacteria, and we also have used the bacteria we collect through this to help with vaccine development.” Though, it should be noted, the continued success of the programme could be in jeopardy as US President Donald Trump’s proposed budget suggests cutting funds to the CDC by 17% (or $1.2 billion). But there are also some non-traditional methods being attempted. Emory University in Atlanta, Georgia, has established a unique Antibiotic Resistance Center. One of its main goals is to build diagnostic tests using mutated bacteria collected by the national surveillance system and physicians in their own clinic that can spot resistant bacteria. “The goal is to have scientists, clinicians, and epidemiologists all working together to address this issue. That’s something that hasn’t traditionally happened. There has been division between what the scientists and clinicians are doing,” says the centre’s director David Weiss. “I’m not a doctor. I need to know from the clinicians a lot of what they’re seeing on the front lines to help guide our research to be as relevant as possible.” A comprehensive, collaborative approach could work: last year, the National Health Service of England announced that in 2015, antibiotic prescribing reduced by 5.3% compared to 2014. Public Health England says that more responsible prescribing is key: it says that it advised the NHS in 2015 on the development of better practices that aim to slash prescriptions by 10% from 2013 to 2014 levels. Lastly, there need to be incentives that encourage the development of new antibiotics. The US National Institute of Health and the Biomedical Advanced Research and Development Authority have set up a biopharmaceutical accelerator called CARB-X. The fund is allotting $48 million to support antibiotic drug discovery projects. “They work with companies in the very early discovery stages to give them funding and technical support to get to the point that they have a product they can do clinical trials with,” says IDSA’s Jezek. Along those same lines, the IDSA is also currently working to develop legislation that would provide funding for clinical trials so that companies can avoid those hefty costs and stand a chance of making a profit from new antibiotics. With all of these programmes working together, and similar efforts taking place around the world, there is a lot of hope that humanity will manage to get a handle on the problem. Still, “we can only really slow the development of resistance. We’re not going to stop it completely,” says Jezek. “Even appropriate use of antibiotics does contribute to resistance.” And that means the challenge will always be immense. As long as there are humans and those humans carry and transmit disease – which they will – the entire world will have to continue fighting for resistance.

#### Worst possible diseases don’t cause extinction

Owen Cotton-**Barratt 17**, et al, PhD in Pure Mathematics, Oxford, Lecturer in Mathematics at Oxford, Research Associate at the Future of Humanity Institute, 2/3/2017, Existential Risk: Diplomacy and Governance, https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf

For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are **very unlikely to cause human extinction**. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, **less than 4%** (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic.

One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

#### Even if a pandemic is virulent AND lethal enough, it burns out

York 14 (Ian, Virologist, 6-4-14, “Why don't diseases completely wipe out species?”, http://www.quora.com/Why-dont-diseases-completely-wipe-out-species)

But mostly diseases don't drive species extinct. There are several reasons for that. For one, the most dangerous diseases are those that spread from one individual to another. If the disease is highly lethal, then the population drops, and it becomes less likely that individuals will contact each other during the infectious phase. Highly contagious diseases tend to burn themselves out that way.

Probably the main reason is variation. Within the host and the pathogen population there will be a wide range of variants. Some hosts may be naturally resistant. Some pathogens will be less virulent. And either alone or in combination, you end up with infected individuals who survive.

### Warming

#### NAS:Fraley said that the global agricultural system needs to adopt the goal of doubling the current yield of crops while reducing key inputs like pesticides, fertilizers, and water by one third

#### -they can’t solve this just by boosting life science innovation – Capitalism creates an incentive not to change how they manage key inputs bc the companies push for deregulation and depend on these pesticides and fertilizers

#### NAS has almost no warrants – it doesn’t say this solves warming just that it helps fight it – Cap is much larger proximate cause.

von Weizsäcker and Wijkman ‘17

Ernest Ulrich von Weizsäcker, Professor and Director of the United Nation Centre for Science and Technology for Development, Founder and President of the Wuppertal Institute, Member of the German Bundestag, chairing the Committees on Globalization and the Environment, Dean of the graduate School of Environmental Science and Management at the University of California, appointed Co-Chair of UNEP’s International Resource Panel, Anders Wijkman, chairman of the Swedish Association of Recycling Industries, member of the Board of the Swedish Development Authority (SIDA), appointed chair of the Swedish Cross-Party Committee on Environmental Objectives, member of the European Parliament, Assistant Secretary-General of the United Nations and Policy Director of UNDP, Secretary General of the Swedish Red Cross and Director General of the Swedish Agency for Research Cooperation with Developing Countries, Member of the Swedish Royal Academy of Sciences, the World Future Council and the International Resource Panel, 2017 (“Come On! Capitalism, Short-termism, Population and the Destruction of the Planet – A Report to the Club”, November 11th, Available Online via Subscription to Springer, Accessed 03-20-2018)

1.1 Introduction: The World in Disarray We all know that the world is in crisis. Science tells us that almost half of the top soils on earth have been depleted in the last 150 years1 ; nearly 90% of fish stocks are either overfished or fully fished.2 Climate stability is in real danger (Sects. 1.5 and 3.7); and the earth is now in the sixth mass extinction period in history.3 Perhaps the most accurate account of the ecological situation is the 2012 ‘Imperative to act’,4 launched by all the 18 recipients (till 2012) of the Blue Planet Prize, including Gro Harlem Brundtland, James Hansen, Amory Lovins, James Lovelock and Susan Solomon. Its key message reads, ‘The human ability to do has vastly outstripped the ability to understand. As a result, civilization is faced with a perfect storm of problems, driven by overpopulation, overconsumption by the rich, the use of environmentally malign technologies and gross inequalities’. And further, ‘The rapidly deteriorating biophysical situation is barely recognized by a global society infected by the irrational belief that physical economies can grow forever’. 1.1.1 Different Types of Crisis and a Feeling of Helplessness The crisis is not cyclical but growing. And it is not limited to the nature around us. There are also a social crisis, a political and a cultural crisis, a moral crisis, as well as a crisis of democracy, of ideologies and of the capitalist system. The crisis also consists of deepened poverty in many countries and the loss of jobs for a considerable part of the population worldwide. Billions of people have reached a state of mind where they don’t trust their government anymore.5 Seen from a geographic point of view, symptoms of crisis are found nearly everywhere. The ‘Arab Spring’ was followed by a series of wars and civil wars, serious human rights violations and many millions of refugees. The internal situation is not better in Eritrea, South Sudan, Somalia, Yemen or Honduras. Venezuela and Argentina, once among the richer states of the world, face huge economic challenges, and neighbouring Brazil has gone through many years of recession and political turmoil. Russia and several East European countries are struggling with major economic and political problems in their post-communist phase. Japan finds it difficult to overcome decadelong stagnation, and to deal with the 2011 tsunami and ensuing nuclear disaster. And the temporary economic upswing several African countries have enjoyed lost its dynamism as soon as the prices of mineral resources collapsed, and partly due to very unusual droughts. Land grabbing is plaguing much of Africa, but also other parts of the world, leading to involuntary dislocations of millions of people and the related problems with refugees both within countries and abroad.6 The response of governments has been concentrated, at worst, on managing their own political image, and at best to treat the symptoms of the crisis, not the cause. The problem is that the political class in the whole world is strongly influenced by investors and by powerful private companies. This indicates that the current crisis is also a crisis of global capitalism. Since the 1980s, capitalism has moved from furthering the economic development of countries, regions and the world towards maximizing profits, and then to a large extent profits from speculation. In addition, the capitalism unleashed since 1980 in the Anglo-Saxon world, and since 1990 worldwide, is mainly financial. This trend was supported by excessive deregulation and liberalization of the economy (see Sect. 2.4). The term ‘shareholder value’ popped up in the business pages of the media worldwide, as if that was now the new epiphany and guardrail for all economic action. In reality, it served to narrow business down to short-term gains, often at the expense of social and ecological values. The myth of shareholder value has been effectively debunked in a recent book by Lynn Stout.7 A different, if related, feature of ‘disarray’ is the rise of aggressive, mostly rightwing movements against globalization in OECD countries, often referred to as populism. These have become overt through Brexit and the Trump victory in the United States. As Fareed Zakaria observes, ‘Trump is part of a broad populist

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upsurge running through the Western world. … In most (countries), populism remains an opposition movement, although one that is growing in strength; in others, such as Hungary, it is now the reigning ideology’.8 This phenomenon of right-wing populism can be explained to an extent by the ‘trunk valley of the elephant curve’ (Fig. 1.1) 9 showing the decline of developed world middle classes, during a 20-year period. While more than half of the world’s population was enjoying over 60% income rises, OECD’s middle classes suffered losses caused mainly by the deindustrialization and job losses in major parts of the United States, Britain and other countries. In the United States, the median income increased by a meagre 1.2% since 1979. The stunning income growth on the left-hand side of the curve, the ‘back of the elephant’, lifting some two billion people out of poverty, was caused mainly by China’s and some other countries’ economic success. What remains invisible on the picture is the far end of ‘the trunk of the elephant’: The richest 1% of the world and, more revolting, the richest eight persons of the world now own as much wealth as the poorest half of the world population combined, a figure publicized by Oxfam during the 2017 World Economic Forum.10 The ‘elephant curve’ gives an incomplete picture for a second reason. The Oxford Poverty and Human Development Initiative (OPHI) has proposed a Multidimensional Poverty Index (MPI) going beyond just income and including ten indicators around health, education and living standards. Using that MPI, OPHI counts 1.6 billion people living in ‘multidimensional poverty’ in 2016 – nearly twice as many as the number of people living in extreme poverty measured by income alone.11 Thirdly, the interpretation of the curve requires an analysis of the people in each percentile group. In fact, they tend to move. And the curve does not distinguish those in Russia and East European countries who lost much of their income after 1990 from those in Detroit or middle England who, for very different reasons, also were among the losers.12 Another fact cannot be seen in the picture: the massive shift of money and income from the manufacturing and trade sectors to the financial sector.13 Bruce Bartlett, a senior policy advisor to both the Reagan and Bush administrations, argues that this ‘financialization’ of the economy is the cause of income inequality, falling wages and the poor performance. David Stockman, Reagan’s director of the Office of Management and Budget, agrees, describing our current situation as ‘corrosive financialization that has turned the economy into a giant casino since the 1970s’.14 Populist politicians in the OECD countries see themselves as speaking for the forgotten ‘ordinary’ people and for genuine patriotism, but they tend to fight and antagonize the people representing democratic institutions – what an irony! For the European Union (EU), the strongest trigger for populism has been the millions of refugees who came or would like to come to Europe from the Near East, from Afghanistan and from Africa. Even the most generous European countries have reached their own assumed limits for receiving these masses of refugees. The EU institutions were too weak (not too powerful, as they are depicted by the new nationalists) to deal with the ‘refugee crisis’, resulting eventually in an identity crisis in the EU. Once a success story of an entity ensuring peace and economic development, the EU has lost some of its unifying narrative. The populist right-wing movements or parties see and criticize the EU as the culprit for all kinds of undesired events. The irony is that continuing the success story would require more, not less, powers for the Union. The Union should be entrusted with border protection, a well-funded common asylum and refugee policy to deal with the refugee crisis and maintain the advantages of the Schengen agreement. And for the re-stabilization of the Euro, the EU or at least the Euro zone needs a common fiscal policy, as the new French President Emmanuel Macron is proposing. But it is these very measures of which nationalist populists are most afraid. The EU in its present form is not without shortcomings. Free market principles have come to dominate EU policymaking, leading to a subordination of other policies, like environment. Notably the UK wanted that priority, as it preferred to see the EU chiefly as a union for mutual trade. And the austerity policies pursued have blocked many benign investments and led to unnecessary suffering among tens of millions of Europeans. Such shortcomings, however, should never be used to put in question the overall objectives of the EU – a union of peace, the rule of law, human rights, cultural understanding and sustainability. Addressing the global crisis of democracy, the German Bertelsmann Foundation has published a 3000-page empirical report on progress (or lack thereof) on democracy and a social market economy, as measured by the Bertelsmann Transformation Index (BTI).15 Over the last few years, the report sees a consistent decay of such parameters as civil rights, free and fair elections, freedom of opinion and of press, freedom of assembly and separation of powers. Within the same time frame, the number of countries in which authoritarian, mostly religious, dogmas influence political decision making rose from 22% to 33%. That report was published before the assaults on democracy and civil rights that occurred in summer 2016 in Turkey or the Philippines. Symptoms of tyranny are spreading, including in some of the countries with a solid tradition of freedom and democracy.16 Let us briefly turn to a different kind of crisis. Well, not exactly a crisis but an unpleasant feature in an otherwise fruitful communication tool, the ‘social media’. Aside from being practical and useful for everyday arrangements and exchange of news and reasonable opinions, social media also have become vehicles for enhancing conflicts and vilification of mostly innocent individuals, and for spreading ‘post truth’ nonsense. Much of the contents of social media political conversation is selfenhancing political rubbish, as those media serve as ‘echo chambers’ for networks of like-minded frustrated citizens.17 An empirical study from China found that anger and indignation are the emotions that are most likely to get viral in the social media, meaning they are multiplied faster and stronger than other emotions.18 The Internet and the social media are also vehicles for ‘bots’ (short for robots) that can disrupt or destroy messages, multiply nonsense and create all kinds of mischief. There are dozens of types of malicious bots (and botnets) to harvest email addresses, to grab content of websites and reuse it without permission, to spread viruses and worms, to buy up good seats for entertainment events, to increase views for YouTube videos or to increase traffic counts in order to extract money from advertisers. A more frightening cause of disarray relates to terrorism. In earlier times, humanity’s violent conflicts occurred mostly between different countries. In recent times, systemic and at least partly religious conflicts prevail, using terror attacks with the explicit intention of making people feel insecure. During much of the twentieth century, religions remained quiet, non-aggressive and geographically confined to rather stable territories. This no longer is true. Partly because of globalized populations moving or being forced to leave their home territories, some factions of Islam have expanded geographically and are claiming strong influence over national states, for example, attacking countries like France with its tradition of laicism that does not permit religion to dominate politics. What tends to be underrepresented in the media is the positive role of religions. In Christian-dominated Europe, liberal and tolerant religion became part of the European identity a century after the Enlightenment successfully discredited the earlier doctrinaire, authoritarian and colonialist-missionary manifestations of the faith. During the Cold War, Christian goals of social cohesion helped build the system of ‘Western values’, often described as the social welfare state, or the ‘social market economy’ (for its partial demise, see Sect. 2.4). With a view towards leading Islam into an equally benign and co-operative social role, some Islamic scholars, such as Syrian born Bassam Tibi, call on Muslims in Europe to integrate into democratic society.19 Tibi, however, is not popular among radical Muslims, to put it mildly. But to understand the radicalization of Islam, one must not underestimate the role played by the West, in particular the United States, in interfering with Near Eastern states. Some would say that the troublesome situations mentioned so far, the recurring topics of media headlines, are only the surface of our world’s ‘disarray’. Deeper and more systemic problems include the breath-taking speed of technological development that may very easily run out of control. One trend is digitization that potentially threatens millions of jobs (see Sect. 1.11.4). Another trend or development can be observed in the biological sciences and technologies. The enormous acceleration of genetic engineering through the CRISPR-Cas9 technology20 is causing fears of monster creation or the extinction of species or varieties not seen as valuable under human utilitarian criteria. Generally, a non-specific feeling is spreading that ‘progress’ has scary sides and that the genie may already have left the bottle (see Sect. 1.11.3). No doubt there is a need to analyse and understand the symptoms and roots of the variety of crises, political, economic, social, technological and environmental. It is also important to recognize the extent to which people perceive the various phenomena of disarray and feel disoriented, and to recognize that the reality and the feelings of disarray have a moral and even religious dimension. 1.1.2 Financialization: A Phenomenon of Disarray An important part of the disorientation relates to financial markets. Historians will look back at the last 30 years with concern, when looking at the explosion in bank balance sheets, backed up by declining levels of equity and massive borrowing. One of the results was a temporary private-sector-led boom. The other was a massive increase in the world’s financial sector (finance, insurance, real estate – FIRE), often called financialization, and subsequently the financial crisis of 2008–2009. Excessive risk-taking developed into a crisis that was close to bringing the whole financial system to a halt. When the bubble burst, many governments were forced to step in with broad support programmes. Governments caught by the new mind-set (see Sect. 2.4) were intimately involved in all of this. True, there are many examples of serious malpractices within the private financial sector. But had it not been for the systematic deregulation of the banks by governments, with the purpose of stimulating economic growth by issuing more debt, the situation would have been radically different. The causes behind the crisis were many and varied: – Excessive lending by the banking industry – Lack of action on the part of regulators and central banks to stop (i) excessive lending, (ii) the spread of exotic financial instruments (synthetic assets and bonds, collateralized mortgage obligations/CMOs, structured debt issues, etc.) and (iii) pure speculative transactions – Opaque tax havens, and the absence of a binding legal framework that is accepted and implemented by the international community, in general, and the major jurisdictions and financial centres – Securitization and distribution by investment banks and other financial actors of mortgage-related assets and investment vehicles transferring the credit risk from the original lender to the ultimate bondholders – Failure by some rating agencies and auditing firms to properly assess and report the inherent risks posed by many of the financial products A deeper analysis is presented by economists Anat Admati and Martin Hellwig21 about the main causes behind the financial crisis. Western banks borrowed far too much with far too little equity in their balance sheets to act as a buffer if things went wrong in their business – from trading in the multitrillion-dollar derivatives markets to often reckless lending on real estate. In the decades following the Second World War, banks operated with between 20% and 30% of their liabilities as equity. By 2008, that had shrunk to just 3%. Banks obviously believed that they had invented instruments that removed the risk, allowing them to run their banks with a tenth of the buffer they had before. It proved to be very unrealistic. But they counted with the state to underwrite their risks. Bankers have enriched themselves spectacularly in the process. They made themselves ‘too big to fail’ – and too big to jail. The 2008 financial crisis was mostly caused by that irresponsible greed.22 Yet, in 2009, not only did bankers avoid criminal prosecutions and receive hundreds of billions in government bailouts, but some still paid themselves record bonuses. At the same time, almost nine million households in the United States had to abandon their homes when the value of their houses plummeted and they could no longer service the adjustable-rate mortgages – the so-called foreclosure crisis.23 Financialization refers to the dominance of the financial sector in the global economy and the tendency for accumulated profits (and leverage) to flow into real estate and other speculative investment. Debt is an intrinsic element in this process. In the United States, for example, both household debt and private sector debt more than doubled relative to GDP between 1980 and 2007.24 The same is true for most OECD countries. At the same time, ‘the value of financial assets grew from four times GDP in 1980 to ten times GDP in 2007 and the finance sector’s share of corporate profits grew from about 10% in the early 1980s to almost 40% by 2006’.25 Adair Turner, chair of the UK’s Financial Services Authority in the years following the 2007–2008 crisis, regards unchecked private credit creation as the key system fault that led to that crisis with its devastating consequences.26 From this follows that the financial sector constitutes a significant and increasing risk factor in the economy. The degree of financialization varies from country to country but the increase in the power of finance is general. The current finance sector evolved in the context of the deregulation that gathered pace from the late 1970s and expanded dramatically after the 1999 removal of the separation between commercial and investment banking in the United States.27 This barrier had been put in place in 1933 by the Roosevelt administration in response to the Wall Street Crash of 1929, when a period of rampant credit creation and financial speculation collapsed. Similar speculation preceded the crisis of 2007–2008: The face value of financial products reached US$640 trillion in September 2008, 14 times the GDP of all the countries on earth.28 Lietaer et al.29 compare speculation with ordinary money transfers paying for goods and services: ‘In 2010, the volume of foreign exchange transactions reached $4 trillion per day’, which does not even include derivatives. In comparison, ‘one day’s exports or imports of all goods and services in the world amount to about 2% of those $4 trillion’. Transactions not paying for goods and services, almost by definition are speculative. Such financial products and transactions, the authors continue, lead regularly to monetary crashes, sovereign debt crises and systemic crashes with an average of more than ten countries in crisis every year. One of the consequences of this development is that a significant part of economic growth has been distributed to the wealthy, as mentioned with the new Oxfam figures in the previous subchapter. Practices within the financial sector demonstrate a disregard for the impact they have on both people and the planet. That includes a distinct short-termism, the ratio of banks’ reserves to their loans, the ratio of banks’ lending that support the real economy versus speculation in property and derivatives, unchecked credit creation – in fact money creation – and the failure to account for long-term climate and environmental risks. In the words of Otto Scharmer at MIT,30 ‘We have a system that accumulates oversupply of money in areas that produce high financial and low environmental and social returns, while at the same an undersupply of money in areas that serve important societal investment needs’. The failure to account for environmental risks means that the pressure on already scarce natural resources accelerates – trees are felled, waterways polluted, wetlands drained and the exploitation of oil, gas and coal accelerating, as long as there is demand. It also means that huge savings, among them pension funds, are locked into investments in fossil-based assets. Such assets are increasingly looked upon as high-risk assets (see Sect. 3.4).

### Health diplomacy

#### They can’t resolve neglected areas just by having more innovation – nothing abt the aff changes the distribution globally.

#### Science diplomacy is more likely to increase conflict – innovation rate & political interests

Dickson 09 [David Dickson David Dickson has been the Chief Executive Officer and President of McDermott International, Inc. since December 16, 2013. Mr. Dickson served as the Chief Operating Officer and Executive Vice from October 31, 2013, to December 16, 2013. He served as the Chief Executive Officer and President of Global Industries Ltd.] The limits of science diplomacy, 4-6-2009, SciDev.Net, accessed 8-26-2021 https://www.scidev.net/global/editorials/the-limits-of-science-diplomacy///ramamurty

But whether scientific cooperation can become a precursor for political collaboration is less evident. For example, despite hopes that the Middle East synchrotron would help bring peace to the region, several countries have been reluctant to support it until the Palestine problem is resolved. Indeed, one speaker at the London meeting (organised by the UK's Royal Society and the American Association for the Advancement of Science) even suggested that the changes scientific innovations bring inevitably lead to turbulence and upheaval. In such a context, viewing science as a driver for peace may be wishful thinking. Conflicting ethos Perhaps the most contentious area discussed at the meeting was how science diplomacy can frame developed countries' efforts to help build scientific capacity in the developing world. There is little to quarrel with in collaborative efforts that are put forward with a genuine desire for partnership. Indeed, partnership — whether between individuals, institutions or countries — is the new buzzword in the "science for development" community. But true partnership requires transparent relations between partners who are prepared to meet as equals. And that goes against diplomats' implicit role: to promote and defend their own countries' interests. John Beddington, the British government's chief scientific adviser, may have been a bit harsh when he told the meeting that a diplomat is someone who is "sent abroad to lie for his country". But he touched a raw nerve. Worlds apart yet co-dependent The truth is that science and politics make an uneasy alliance. Both need the other. Politicians need science to achieve their goals, whether social, economic or — unfortunately — military; scientists need political support to fund their research. But they also occupy different universes. Politics is, at root, about exercising power by one means or another. Science is — or should be — about pursuing robust knowledge that can be put to useful purposes. A strategy for promoting science diplomacy that respects these differences deserves support. Particularly so if it focuses on ways to leverage political and financial backing for science's more humanitarian goals, such as tackling climate change or reducing world poverty. But a commitment to science diplomacy that ignores the differences — acting for example as if science can substitute politics (or perhaps more worryingly, vice versa), is dangerous.

#### Empirically denied

Patman 17 [Robert G. Patman is professor of politics and director of international studies at the University of Otago, New Zealand. He is coeditor of the Praeger Security International series Ethics of American Foreign Policy.], “Donald Trump, climate denial and other obstacles to science diplomacy,” https://www.noted.co.nz/currently/science/donald-trump-climate-denial-and-other-obstacles-to-science-diplomacy/, mm

The term science diplomacy has entered the vocabulary of policymakers, scientists and scholars of international relations. It refers to the way states use scientific knowledge to address problems and to build international partnerships to deal with some of the planet’s most urgent challenges. Science diplomacy’s direct relationship with government interests and goals distinguishes it from other forms of international scientific co-operation, which are driven by research or commercial imperatives and often occur without direct state participation. In 2008, the American Association for the Advancement of Science (AAAS) established the Centre for Science Diplomacy, which sought to use science “to build bridges between countries and to promote scientific co-operation as an essential element of foreign policy”. Two years later, the AAAS and the Royal Society in the United Kingdom produced a report called New Frontiers in Science Diplomacy: Navigating the Changing Balance of Power. And in the past six years, research institutions and universities, including my own, have hosted conferences on science diplomacy. The United Nations and the European Union, along with the US, the UK, Switzerland, Germany, Japan and New Zealand, have collaborated in building policymaking capacity to conduct science diplomacy. In particular, the New Zealand Government’s chief science adviser, Professor Sir Peter Gluckman, has worked to establish an International Network of Government Science Advice. In August 2014, the first international meeting on science advice to governments was held in Auckland. It was attended by more than 240 delegates from 44 countries. Furthermore, in 2015, the US National Academy of Sciences released its own assessment of science in the US Department of State in a study entitled Diplomacy for the 21st Century: Embedding a Culture of Science and Technology Throughout the Department of State. The results have been mixed. Science diplomacy has been used to initiate and manage large-scale international science projects. In the Asia-Pacific region, the Square Kilometre Array (SKA) project is a multilateral diplomatic effort aimed at extending scientific collaboration to establish a large radio telescope that will dramatically improve human capabilities to survey space. The development of SKA will intensify next year, incorporating antennas in open areas, free from radio noise, that will relay information to central cores in Australia and South Africa. The project’s headquarters are at the Jodrell Bank Observatory in Cheshire, England. New Zealand is a partner of Australia in this project, and some 20 countries, including India and China, are participating and sharing the estimated €2 billion (NZ$3 billion) cost. The SKA project aims “to provide answers to fundamental questions” about general relativity, galaxy evolution, cosmic magnetism, the cosmic dawn and extraterrestrial life. This is one way in which diplomacy can expand the scope of scientific collaboration. Since the signing of the Antarctic Treaty in 1959, nations with a presence in Antarctica have largely embraced scientific co-operation and the area has become something of a peace zone. In 2016, after five years of diplomatic negotiations, 25 nations agreed to establish the world’s largest marine protection park in the Ross Sea. By contrast, science diplomacy has notably failed to address global warming. The Intergovernmental Panel on Climate Change, an international group of more than 2000 scientists established in 1988, concluded that not only was global warming perhaps the most significant threat to the planet, but also that the culprit was atmospheric greenhouse gas generated by human activities: industrial pollution, traffic emissions and intensive farming. International treaties designed to limit greenhouse-gas emissions were signed at successive high-profile meetings at the United Nations Framework Convention on Climate Change in Rio de Janeiro, Kyoto, Copenhagen and, most recently, Paris. To date, however, little has been achieved and the targets set are woefully short of what scientists say is needed. Climate diplomacy has faced two obstacles. President George W Bush and, more recently, president-elect Donald Trump have found it politically and economically expedient to ignore or dispute the evidence. In particular, Trump has repeatedly described climate change as a “hoax” and nominated a climate-change denier, Oklahoma Attorney General Scott Pruitt, as the head of the Environmental Protection Agency. Moreover, diplomats have often lacked a clear grasp of the scientific evidence and negotiated in an incremental fashion at odds with the “tipping-point” nature of the threat. In short, many of the planet’s major problems – in climate, food, water, energy and health – are of global proportions and almost all are linked, in some way, to science and technology. Yet many states still cling to the Westphalian doctrine of unfettered sovereignty.

#### TURN Scientific diplomacy can’t solve problems - creates more instead

Dickson 10 [David Dickson David Dickson has been the Chief Executive Officer and President of McDermott International, Inc. since December 16, 2013. Mr. Dickson served as the Chief Operating Officer and Executive Vice from October 31, 2013, to December 16, 2013. He served as the Chief Executive Officer and President of Global Industries Ltd.] SciDev.Net, accessed 8-26-2021 <https://scidevnet.wordpress.com/category/science-diplomacy-conference-2010>) AS

There’s a general consensus in both the scientific and political worlds that the principle of science diplomacy, at least in the somewhat restricted sense of the need to get more and better science into international negotiations, is a desirable objective. There is less agreement, however, on how far the concept can – or indeed should – be extended to embrace broader goals and objectives, in particular attempts to use science to achieve political or diplomatic goals at the international level. Science, despite its international characteristics, is no substitute for effective diplomacy. Any more than diplomatic initiatives necessarily lead to good science. These seem to have been the broad conclusions to emerge from a three-day meeting at Wilton Park in Sussex, UK, organised by the British Foreign Office and the Royal Society, and attended by scientists, government officials and politicians from 17 countries around the world. The definition of science diplomacy varied widely among participants. Some saw it as a subcategory of “public diplomacy”, or what US diplomats have recently been promoting as “soft power” (“the carrot rather than the stick approach”, as a participant described it). Others preferred to see it as a core element of the broader concept of “innovation diplomacy”, covering the politics of engagement in the familiar fields of international scientific exchange and technology transfer, but raising these to a higher level as a diplomatic objective. Whatever definition is used, three particular aspects of the debate became the focus of attention during the Wilton Park meeting: how science can inform the diplomatic process; how diplomacy can assist science in achieving its objectives; and, finally, how science can provide a channel for quasi-diplomatic exchanges by forming an apparently neutral bridge between countries. There was little disagreement on the first of these. Indeed for many, given the increasing number of international issues with a scientific dimension that politicians have to deal with, this is essentially what the core of science diplomacy should be about. Chris Whitty, for example, chief scientist at the UK’s Department for International Development, described how knowledge about the threat raised by the spread of the highly damaging plant disease stem rust had been an important input by researchers into discussions by politicians and diplomats over strategies for persuading Afghan farmers to shift from the production of opium to wheat. Others pointed out that the scientific community had played a major role in drawing attention to issues such as the links between chlorofluorocarbons in the atmosphere and the growth of the ozone hole, or between carbon dioxide emissions and climate change. Each has made essential contributions to policy decisions. Acknowledging this role for science has some important implications. No-one dissented when Rohinton Medhora, from Canada’s International Development Research Centre, complained of the lack of adequate scientific expertise in the embassies of many countries of the developed and developing world alike. Nor – perhaps predictably – was there any major disagreement that diplomatic initiatives can both help and occasionally hinder the process of science. On the positive side, such diplomacy can play a significant role in facilitating science exchange and the launch of international science projects, both essential for the development of modern science. Europe’s framework programme of research programmes was quoted as a successful advantage of the first of these. Examples of the second range from the establishment of the European Organisation of Nuclear Research (usually known as CERN) in Switzerland after the Second World War, to current efforts to build a large new nuclear fusion facility (ITER). Less positively, increasing restrictions on entry to certain countries, and in particular the United States after the 9/11 attacks in New York and elsewhere, have significantly impeded scientific exchange programmes. Here the challenge for diplomats was seen as helping to find ways to ease the burdens of such restrictions. The broadest gaps in understanding the potential of scientific diplomacy lay in the third category, namely the use of science as a channel of international diplomacy, either as a way of helping to forge consensus on contentious issues, or as a catalyst for peace in situations of conflict. On the first of these, some pointed to recent climate change negotiations, and in particular the work of the Intergovernmental Panel on Climate Change, as a good example, of the way that the scientific community can provide a strong rationale for joint international action. But others referred to the failure of the Copenhagen climate summit last December to come up with a meaningful agreement on action as a demonstration of the limitations of this way of thinking. It was argued that this failure had been partly due to a misplaced belief that scientific consensus would be sufficient to generate a commitment to collective action, without taking into account the political impact that scientific ideas would have. Another example that received considerable attention was the current construction of a synchrotron facility SESAME in Jordan, a project that is already is bringing together researchers in a range of scientific disciplines from various countries in the Middle East (including Israel, Egypt and Palestine, as well as both Greece and Turkey). The promoters of SESAME hope that – as with the building of CERN 60 years ago, and its operation as a research centre involving, for example, physicists from both Russia and the United States – SESAME will become a symbol of what regional collaboration can achieve. In that sense, it would become what one participant described as a “beacon of hope” for the region. But others cautioned that, however successful SESAME may turn out to be in purely scientific terms, its potential impact on the Middle East peace process should not be exaggerated. Political conflicts have deep roots that cannot easily be papered over, however open-minded scientists may be to professional colleagues coming from other political contexts. Indeed, there was even a warning that in the developing world, high profile scientific projects, particular those with explicit political backing, could end up doing damage by inadvertently favouring one social group over another. Scientists should be wary of having their prestige used in this way; those who did so could come over as patronising, appearing unaware of political realities. Similarly, those who hold science in   esteem as a practice committed to promoting the causes of peace and development were reminded of the need to take into account how **advances in science** – whether **nuclear physics or genetic technology – have** also **led to new types of weaponry**. Nor did science automatically lead to the reduction of global inequalities. “Science for diplomacy” therefore ended up with a highly mixed review. The consensus seemed to be that science can prepare the ground for diplomatic initiatives – and benefit from diplomatic agreements – but cannot provide the solutions to either. “On tap but not on top” seems as relevant in international settings as it does in purely national ones. With all the caution that even this formulation still requires.

ales and advertising. Of the 10 largest pharmaceutical companies, only one spends more on research than on marketing its products. But it’s hard to figure out what it actually costs drug companies to conduct the research required to get FDA approval and bring a single drug to market. The pharmaceutical industry and its advocates tend to peg the cost of creating and bringing to market just one new drug at $2.6 billion. This figure comes from a cost report published in October 2016 by the Tufts Center for the Study of Drug Development. There are several reasons to suspect that number is unreliable. According to the Tufts Center’s website, more than a quarter of its budget comes from “unrestricted grants” from pharmaceutical companies and their partners. And no one can verify Tufts’ analyses and claims: The authors say the data come from research spending on 106 drugs produced by 10 of the top 50 multinational pharmaceutical companies, but the underlying data are deemed proprietary and confidential. Tufts also uses a cost-accounting methodology that appears to significantly inflate its estimate. About 45 percent of Tufts’ $2.6 billion figure is attributed to the amount companies would pay to lenders and shareholders for the capital they invest in research. Tufts uses an interest rate of 10.5 percent a year, but investment bankers tend to use just 6 percent in their economic models. That one change would reduce the Tufts estimate by about a quarter of its total figure. That’s not to mention other factors the Tufts team leaves out that reduce the cost of drug development, such as tax credits the federal government offers for research and development. When asked about these issues, the report’s chief author, Joseph DiMasi, noted that one other study with public data, published in 2009, comes to similar results. He argues that even if we exclude the cost of capital, $1.4 billion per FDA-approved drug is a high price—and the cost has been growing at about 8.5 percent annually. But in November 2017, a study published in JAMA Internal Medicine examined the costs of developing 10 cancer drugs approved by the FDA from 2006 to 2015 and provided a strong contrast to the Tufts study from a year before. Its authors, from Memorial Sloan Kettering and the Oregon Health and Science University, used annual financial disclosures from the Securities and Exchange Commission for companies that had only one cancer drug approved but had on average three or four other drugs in development. They found that companies took an average of 7.3 years to win FDA approval, at a median cost of $648 million. Only two drugs had research costs over $1 billion. Adding in the cost of capital at 7 percent increased the median research and development cost to $757 million—less than a third of the Tufts estimate. Pharmaceutical companies often claim that the research costs of unsuccessful drugs also have to be taken into account. After all, 90 percent of all drugs that enter human testing fail. But most of these failures occur early and at relatively low costs. About 40 percent of drugs fail in preliminary Phase I studies, which assess a drug’s safety in humans and typically cost just $25 million a drug. Of the drugs that clear this first phase of testing, about 70 percent fail during Phase II studies, which assess whether a drug does what it is supposed to do. The research costs of these studies are still relatively low compared with overall R&D costs—on average, under $60 million a study. The 2017 JAMA Internal Medicine study incorporated all research costs on drugs not yet on the market into its final calculations. The pharmaceutical companies it examined had an average drug success rate of 23 percent, which the Tufts researchers argue is too high to accurately represent the amount of money that failed drugs would usually add to a company’s research costs. But cancer drugs, specifically, do have a success rate of 20 to 25 percent—so the selection of only successful companies does not seem to be the difference. Joaquin Duato, the vice chairman of Johnson & Johnson’s executive committee, argues that critics fail to deal with the realities of drug R&D. He told me that last year, Johnson & Johnson had $41 billion in prescription-drug sales, of which $8.4 billion went to R&D and $4.5 billion went to sales and marketing. Other costs included manufacturing, finance, IT, taxes, and more. This funds research on 100 candidate drugs, which result in one or two FDA approvals a year. “For drug companies, the return on capital is in the mid-teens, which is nowhere near tech-company returns,” Duato said. Nevertheless, some former pharmaceutical-company executives say that research costs do not determine drug prices—and they explain how. In his book A Call to Action, Hank McKinnell, a past CEO of Pfizer, wrote under the heading “The Fallacy of Recapturing R&D Costs”: How do we decide what to charge? It’s basically the same as pricing a car … A number of factors go into the mix. These factors consider cost of business, competition, patent status, anticipated volume, and, most important, our estimate of the income generated by sales of the product. It is the anticipated income stream, rather than repayment of sunk costs, that is the primary determinant of price. Raymond Gilmartin, a former Merck CEO, once said to The Wall Street Journal

#### No sustainability-

#### 1] We live in a world w finite resources and capitalism is a system predicate on infinite production- proves no solvency

#### 2] Competition boosts resource extraction which cause extinction – for example they conceded unsustainable overfishing for maritime economies causes food wars - that’s Wijkman-

#### 3] A] Theres literally an econ collapse every 10 years- empirically disproven B] cuba is on track for 0 emisisons and is v tech advanced with innovation despite sanctions

#### **4] They are wrong about everything**

Jeremy Lent 18, author of The Patterning Instinct: A Cultural History of Humanity’s Search for Meaning, which investigates how different cultures have made sense of the universe and how their underlying values have changed the course of history, BA in English Literature from Cambridge University and an MBA from the University of Chicago. openDemocracy, 21 May 2018, “Steven Pinker’s ideas are fatally flawed. These eight graphs show why.” <https://www.opendemocracy.net/en/transformation/steven-pinker-s-ideas-are-fatally-flawed-these-eight-graphs-show-why/> | ahsBC

In November 2017, around the time when Pinker was likely putting the final touches on his manuscript, over fifteen thousand scientists from 184 countries issued a dire warning to humanity. Because of our overconsumption of the world’s resources, they declared, we are facing “widespread misery and catastrophic biodiversity loss.” They warned that time is running out: “Soon it will be too late to shift course away from our failing trajectory.”

Chart, line chart

Description automatically generated

Figure 1: Three graphs from World Scientists' Warning to Humanity: A Second Notice.

They included nine sobering charts and a carefully worded, extensively researched analysis showing that, on a multitude of fronts, the human impact on the earth’s biological systems is increasing at an unsustainable rate. Three of those alarming graphs are shown here: the rise in CO2 emissions; the decline in available freshwater; and the increase in the number of ocean dead zones from artificial fertilizer runoff.

This was not the first such notice. Twenty-five years earlier, in 1992, 1,700 scientists (including the majority of living Nobel laureates) sent a similarly worded warning to governmental leaders around the world, calling for a recognition of the earth’s fragility and a new ethic arising from the realization that “we all have but one lifeboat.” The current graphs starkly demonstrate how little the world has paid attention to this warning since 1992.

Taken together, these graphs illustrate ecological overshoot: the fact that, in the pursuit of material progress, our civilization is consuming the earth’s resources faster than they can be replenished. Overshoot is particularly dangerous because of its relatively slow feedback loops: if your checking account balance approaches zero, you know that if you keep writing checks they will bounce. In overshoot, however, it’s as though our civilization keeps taking out bigger and bigger overdrafts to replenish the account, and then we pretend these funds are income and celebrate our continuing “progress.” In the end, of course, the money runs dry and it’s game over.

Pinker claims to respect science, yet he blithely ignores fifteen thousand scientists’ desperate warning to humanity. Instead, he uses the blatant rhetorical technique of ridicule to paint those concerned about overshoot as part of a “quasi-religious ideology… laced with misanthropy, including an indifference to starvation, an indulgence in ghoulish fantasies of a depopulated planet, and Nazi-like comparisons of human beings to vermin, pathogens, and cancer.” He then uses a couple of the most extreme examples he can find to create a straw-man to buttress his caricature. There are issues worthy of debate on the topic of civilization and sustainability, but to approach a subject of such seriousness with emotion-laden rhetoric is morally inexcusable and striking evidence of Monbiot’s claim that Pinker “insults the Enlightenment principles he claims to defend.”

When Pinker does get serious on the topic, he promotes Ecomodernism as the solution: a neoliberal, technocratic belief that a combination of market-based solutions and technological fixes will magically resolve all ecological problems. This approach fails, however, to take into account the structural drivers of overshoot: a growth-based global economy reliant on ever-increasing monetization of natural resources and human activity. Without changing this structure, overshoot is inevitable. Transnational corporations, which currently constitute sixty-nine of the world’s hundred largest economies, are driven only by increasing short-term financial value for their shareholders, regardless of the long-term impact on humanity. As freshwater resources decline, for example, their incentive is to buy up what remains and sell it in plastic throwaway bottles or process it into sugary drinks, propelling billions in developing countries toward obesity through sophisticated marketing. In fact, until an imminent collapse of civilization itself, increasing ecological catastrophes are likely to enhance the GDP of developed countries even while those in less developed regions suffer dire consequences.

#### 7] And insects

Robert Hunziker 18, MA in Economic History from DePaul University, environmental journalist for over fifty publications, 3/27/18, “Insect Decimation Upstages Global Warming,” <https://www.transcend.org/tms/2018/04/insect-decimation-upstages-global-warming/>

Everybody’s heard about global warming. It is one of the most advertised existential events of all time. Who isn’t aware? However, there’s a new kid on the block. **An alarming loss of insects will likely take down humanity before global warming hits maximum velocity.** For the immediate future, the Paris Accord is riding the wrong horse, as global warming is a long-term project compared to the insect catastrophe happening right now! Where else is found 40% to 90% species devastation? The worldwide loss of insects is simply staggering with some reports of 75% up to 90%, happening much faster than the paleoclimate record rate of the **past five major extinction events**. It is possible that some insect species may already be close to total extinction! It’s established that species evolve and then go extinct over thousands and millions of years as part of nature’s course, but the current rate of devastation is simply “off the charts, and downright scary.” Without any doubt, it is difficult to imagine how humanity survives **without insects**, which are dropping dead in bunches right before our eyes. For proof, how many insect splats do people clean off windshields nowadays? Not many…. How many fireflies do children chase at night? Not many…. Several naturalists and environmental writers believe the massive loss of insects has everything to do with three generations of **industrialized farming** and the vast tide of poisons pouring over the landscape year-after-year, especially since the end of WWII. Ours is the first-ever pesticide-based agricultural society. Dreadfully, it’s an experiment that is going dead wrong… all of a sudden! **Insects are basic to thousands of food chains**; for example, the disappearance of Britain’s farmland birds by over 50% in 40 years. Additionally, North America and Europe species of birds like larks, swallows, and swifts that feast on flying insects have plummeted. But, these are only a few of many, many recorded examples of massive numbers of wildlife dropping dead right before our eyes. Significantly, insects are the primary source for ecosystem creation and support. The world literally crumbles apart without mischievous burrowing, forming new soil, aerating soil, pollinating food crops, etc. Nutrition for humans happens because insects pollinate.