## 1

#### The meta-ethic is procedural moral realism.

#### This entails that moral facts stem from procedures while substantive realism holds that moral truths exist independently of that in the empirical world. Prefer procedural realism –

#### [1] Collapses – the only way to verify whether something is a moral fact is by using procedures to warrant it.

#### [2] Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### [3] Is/Ought Gap – we can only perceive what is, not what ought to be. It’s impossible to derive an ought statement from descriptive facts about the world, necessitating a priori premises.

#### [4] Regress – I can keep asking “why should I follow this” which results in skep since obligations are predicated on ignorantly accepting rules. Only reason solves since asking “why reason?” requires reason which is self-justified.

#### That means we must universally will maxims— any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with the categorical imperative.

#### Impact calc – the only relevant offense under my framework is that of libertarian ownership. The universality of freedom justifies a libertarian state which outweighs on actor specificity.

**Otteson 9** \*\*brackets in original\*\* James R. Otteson (professor of philosophy and economics at Yeshiva University) “Kantian Individualism and Political Libertarianism” The Independent Review, v. 13, n. 3, Winter 2009

In a crucial passage in Metaphysics of Morals, Kant writes that the “Universal Principle of Right” is “‘[e]very action which by itself or by its maxim enables the freedom of each individual’s will to co-exist with the freedom of everyone else in accordance with a universal law is right.’” He concludes, “Thus the universal law of right is as follows: let your external actions be such that the free application of your will can co-exist with the freedom of everyone in accordance with a universal law” (1991, 133, emphasis in original).5 This stipulation becomes for Kant the grounding 5. Other statements of this law of equal freedom appear in the Critique of Pure Reason (Kant [1781] 1965, 312; see also 1991, 191, “Universal History,” 45 and 50, and “Theory and Practice,” 73 and 80). 394 ✦ JAMES R. OTTESON THE INDEPENDENT REVIEW justification for the existence of a state, its raison d’être, and the reason we leave the state of nature is to secure this sphere of maximum freedom compatible with the same freedom of all others. Because this freedom must be complete, in the sense of being as full as possible given the existence of other persons who demand similar freedom, it entails that the state may—indeed, must—secure this condition of freedom, but undertake to do nothing else because any other state activities would compromise the very autonomy the state seeks to defend. Kant’s position thus outlines and implies a political philosophy that is broadly libertarian; that is, it endorses a state constructed with the sole aim of protecting its citizens against invasions of their liberty. For Kant, individuals create a state to protect their moral agency, and in doing so they consent to coercion only insofar as it is required to prevent themselves or others from impinging on their own or others’ agency. In his argument, individuals cannot rationally consent to a state that instructs them in morals, coerces virtuous behavior, commands them to trade or not, directs their pursuit of happiness, or forcibly requires them to provide for their own or others’ pursuits of happiness. And except in cases of punishment for wrongdoing,6 this severe limitation on the scope of the state’s authority must always be respected: “The rights of man must be held sacred, however great a sacrifice the ruling power may have to make. There can be no half measures here; it is no use devising hybrid solutions such as a pragmatically conditioned right halfway between right and utility. For all politics must bend the knee before right, although politics may hope in return to arrive, however slowly, at a stage of lasting brilliance” (Perpetual Peace, 1991, 125). The implication is that a Kantian state protects against invasions of freedom and does nothing else; in the absence of invasions or threats of invasions, it is inactive.

#### Negate:

#### [2] Banning private space appropriation inhibits the sale and use of spacecraft and fuel- that’s a form of restricting the free economic choices of individuals

**Richman 12**, Sheldon. “The free market doesn’t need government regulation.” Reason, August 5, 2012. // AHS RG

Order grows from market forces. But where do **market forces** come from? They **are the result of human action. Individuals select ends and act to achieve them by adopting suitable means.** Since means are scarce and ends are abundant, **individuals economize in order to accomplish more rather than less.** And they always seek to exchange lower values for higher values (as they see them) and never the other way around. In a world of scarcity, tradeoffs are unavoidable, so one aims to trade up rather than down. (One’s trading partner does the same.) **The result of this**, along with other **features of human action**, and the world at large **is what we call market forces. But really, it is just men and women acting rationally in the world.**

#### [3] Acquisition of property can never be unjust – to create rights violations, there must already be an owner of the property being violated, but that presupposes its appropriation by another entity.

Feser 1, (Edward Feser, 1-1-2005, accessed on 12-15-2021, Cambridge University Press, "THERE IS NO SUCH THING AS AN UNJUST INITIAL ACQUISITION | Social Philosophy and Policy | Cambridge Core", Edward C. Feser is an American philosopher. He is an Associate Professor of Philosophy at Pasadena City College in Pasadena, California. [https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)[brackets](https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)%5bbrackets) for gen lang]//phs st

There is a serious difficulty with this criticism of Nozick, however. It is just this: There is no such thing as an unjust initial acquisition of resources; therefore, there is no case to be made for redistributive taxation on the basis of alleged injustices in initial acquisition. This is, to be sure, a bold claim. Moreover, in making it, I contradict not only Nozick’s critics, but Nozick himself, who clearly thinks it is at least possible for there to be injustices in acquisition, whether or not there have in fact been any (or, more realistically, whether or not there have been enough such injustices to justify continual redistributive taxation for the purposes of rectifying them). But here is a case where Nozick has, I think, been too generous to the other side. Rather than attempt —unsatisfactorily, in the view of his critics—to meet the challenge to show that initial acquisition has not in general been unjust, he ought instead to have insisted that there is no such challenge to be met in the first place. Giving what I shall call “the basic argument” for this audacious claim will be the task of Section II of this essay. The argument is, I think, compelling, but by itself it leaves unexplained some widespread intu- itions to the effect that certain specific instances of initial acquisition are unjust and call forth as their remedy the application of a Lockean proviso, or are otherwise problematic. (A “Lockean proviso,” of course, is one that forbids initial acquisitions of resources when these acquisitions do not leave “enough and as good” in common for others.) Thus, Section III focuses on various considerations that tend to show how those intuitions are best explained in a way consistent with the argument of Section II. Section IV completes the task of accounting for the intuitions in question by considering how the thesis of self-ownership itself bears on the acqui- sition and use of property. Section V shows how the results of the previ- ous sections add up to a more satisfying defense of Nozickian property rights than the one given by Nozick himself, and considers some of the implications of this revised conception of initial acquisition for our under- standing of Nozick’s principles of transfer and rectification. II. The Basic Argument The reason there is no such thing as an unjust initial acquisition of resources is that there is no such thing as either a just or an unjust initial acquisition of resources. The concept of justice, that is to say, simply does not apply to initial acquisition. It applies only after initial acquisition has already taken place. In particular, it applies only to transfers of property (and derivatively, to the rectification of injustices in transfer). This, it seems to me, is a clear implication of the assumption (rightly) made by Nozick that external resources are initially unowned. Consider the following example. Suppose an individual A seeks to acquire some previously unowned resource R. For it to be the case that A commits an injustice in acquiring R, it would also have to be the case that there is some individual B (or perhaps a group of individuals) against whom A commits the injustice. But for B to have been wronged by A’s acquisi- tion of R, B would have to have had a rightful claim over R, a right to R. By hypothesis, however, B did not have a right to R, because no one had a right to it—it was unowned, after all. So B was not wronged and could not have been. In fact, the very first person who could conceivably be wronged by anyone’s use of R would be, not B, but A himself, since A is the first one to own R. Such a wrong would in the nature of the case be an injustice in transfer—in unjustly taking from A what is rightfully his—not in initial acquisition. The same thing, by extension, will be true of all unowned resources: it is only after some- one has initially acquired them that anyone could unjustly come to possess them, via unjust transfer. It is impossible, then, for there to be any injustices in initial acquisition.7

#### [4] To own yourself and use your own freedom is to be able to interact with external objects. Anything else makes you unable to exercise your own freedom on other things and creates a contradiction.

Feser 2, (Edward Feser, 1-1-2005, accessed on 12-15-2021, Cambridge University Press, "THERE IS NO SUCH THING AS AN UNJUST INITIAL ACQUISITION | Social Philosophy and Policy | Cambridge Core", Edward C. Feser is an American philosopher. He is an Associate Professor of Philosophy at Pasadena City College in Pasadena, California. [https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)[brackets](https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)%5bbrackets) for gen lang]//phs st

There is. An alternative, soft-line approach could acknowledge that the initial acquirer who abuses a monopoly over a water hole (or any similar crucial resource) does commit an injustice against those who are disad- vantaged, but such an approach could still hold that the acquirer never- theless has not committed an injustice in acquisition —his acquisition was, as I have said, neither just nor unjust. Nor does he fail to own what he has acquired; he still cannot be said to have stolen the water from anyone. Rather, his injustice is an unjust use of what he owns, on a par with the unjust use I make of my self-owned fist when I wield it, unprovoked, to bop you on your self-owned nose. In what sense does the water-hole owner use his water unjustly, though? He doesn’t try to drown anyone in it, after all— indeed, the whole problem is that he won’t let anybody near it! Eric Mack gives us the answer we need in what he has put forward as the “self-ownership proviso” (SOP).28 This is a proviso not (as the Lock- ean proviso is) on the initial acquisition of property, but rather on how one can use his property in a way that respects others’ self-ownership rights. It is motivated by consideration of the fact that the talents, abilities, capac- ities, energies, etc., that a person rightfully possesses as a self-owner are inherently “world-interactive”; that is, it is of their very essence that they are directed toward the extra-personal environment.29 Your capacity to use your hand, for instance, is just a capacity to grasp and manipulate external objects; thus, what you own in owning your hand is something essentially grasping and manipulating.30 Now if someone were to cut off your hand or invasively keep you from using it (by tying your arm against your body or holding it behind your back), he would obviously be violating your self-ownership rights. But there are, Mack suggests, other, noninvasive ways in which those rights might be violated. If, to use an example of Mack’s, I effectively nullify your ability to use your hand by creating a device that causes anything you reach for to be propelled beyond your grasp, making it impossible for you ever to grasp or manip- ulate anything, I have violated your right to your hand as much as if I had cut it off or tied it down. I have, in any case, prevented your right to your hand from being anything more than a formal right, one that is practically useless. In the interests of guaranteeing respect for substantive, robust rights of self-ownership, then, “[t]he SOP requires that persons not deploy their legitimate holdings, i.e., their extra-personal property, in ways that severely, albeit noninvasively, disable any person’s world-interactive powers.” 31 The SOP follows, in Mack’s view, from the thesis of self-ownership itself; or, at any rate, the considerations that would lead anyone to accept that thesis should also, in his view, lead one to accept the proviso.32 A brief summary of a few of Mack’s thought experiments should suffice to give a sense of why this is so.33 In what Mack calls the Adam’s Island example, Adam acquires a previously uninhabited island and later refuses a shipwrecked Zelda permission to come ashore, as a result of which she remains struggling at sea (and presumably drowns). In the Paternalist Caging example, instead of drowning, Zelda becomes caught offshore in a cage Adam has constructed for catching large sea mammals, and, rather than releasing her, Adam keeps her in the cage and feeds her regularly. In the Knuckle-Scraper Barrier example, Zelda falls asleep on some unowned ground, whereupon a gang of oafish louts encircles her and, using their bodies and arms as barriers, refuses to let her out of the circle (accusing her of assault if she touches them in order to climb over or break through). In the Disabling Property Barrier example, instead of a human barrier, Adam constructs a plastic shield over and around the unowned plot of ground upon which Zelda sleeps, accusing her of trespassing upon his property when she awakens and tries to escape by breaking through the plastic. And in the (similarly named) Disabling Property Barriers example, seem to suggest an Aristotelian-Thomistic conception of natural function, and though this by no means troubles me, it might not be what Mack himself has in mind (nor, of course, is it something every philosopher is going to sympathize with). Mack’s view nevertheless seems to require something like this conception. And something like it —enough like it to do the job Mack needs to be done, anyway—is arguably to be found in Larry Wright’s well- known reconstruction, in modern Darwinian terms, of the traditional notion of natural function. See Larry Wright, “Functions,” Philosophical Review 82, no. 2 (1973): 139–68. Adam, instead of enclosing Zelda in a plastic barrier, encloses in plastic barriers every external object that Zelda would otherwise be able to use — thus, in effect, enclosing her in a larger, all-encompassing plastic barrier of a more eccentric shape. In all of these cases, Mack says, although Zelda’s formal rights of self-ownership have not been violated—no one has invaded the area enclosed by the surface of her skin —her rights over her self-owned powers, and in particular her ability to exercise those powers, have nevertheless been nullified. But a plausible self-ownership- based theory surely cannot allow for this. It cannot, for instance, allow the innocent Zelda justly to be imprisoned in any of the ways described! If Mack is right, then it seems we have, in the SOP, grounds for holding that a water-hole monopolist would indeed be committing an injustice against anyone he refuses water to, or to whom he charges exorbitant prices for access. The injustice would be a straightforward violation of a person’s rights to self-ownership, a case of nullifying a person’s self- owned powers in a way analogous to Adam’s or the knuckle-scrapers’ nullification of Zelda’s self-owned powers. It would not be an injustice in initial acquisition, however. The water-hole monopolist still owns the water hole as much as he ever did; he just cannot use it in a way that violates other individuals’ self-ownership rights (either by drowning them in it or by nullifying their self-owned powers by denying them access to it when there is no alternative way for them to gain access to the water necessary for the use of their self-owned powers). Is Mack right? The hard-liner might dig in his heels and insist that none of Mack’s examples amount to self-ownership-violating injustices; instead, they are merely subtle but straightforward property rights violations or cases of moral failings of various other sorts (cruelty, selfishness, etc.). The Adam’s Island case, for starters, is roughly analogous to the example of the water-hole monopolist, so that it arguably cannot give any non-question- begging support to the SOP, if the SOP is then supposed to show that the water-hole example involves an injustice. The Disabling Property Barriers case might also be viewed as unable to provide any non-question-begging support, since Adam’s encasing everything in plastic might plausibly be interpreted as his acquiring everything, in which case we are back to a water-hole-type monopoly example. The Knuckle-Scraper Barrier and Dis- abling Property Barrier examples might be explained by saying that in falling asleep on the unowned plot of land, Zelda in effect has come (at least temporarily) to acquire it, and (by virtue of walking) to acquire also the path she took to get to it, so that the knuckle-scrapers and Adam violate her property rights (not her self-ownership rights) in not allowing her to escape. The Paternalist Caging example can perhaps be explained by arguing that in building the cage, Adam has acquired the water route leading to it, so that in swimming this route (and thus getting caught in the cage) Zelda has violated his property rights and, therefore, can justly be caged. Accordingly, the hard-liner might insist, we can explain all of these examples in a hard-line way and thus avoid commitment to the SOP. Such a hard-line response would be ingenious (well, maybe), but still, I think, ultimately doomed to failure. Can the Paternalist Caging example, to start with, plausibly be explained away in the manner that I have suggested? Does Adam commit no injustice against Zelda even if he never lets her out? It will not do to write this off merely as a case of excessive punishment (explaining the injustice of which would presumably not require commitment to the SOP). For suppose Adam says, after a mere five minutes of confinement, “I’m no longer punishing you; you’ve paid your debt and are free to go, as far as I’m concerned. But I’m not going to bother exerting the effort to let you out. I never forced you to get in the cage, after all —you did it on your own —and you have no right to the use of my self-owned cage-opening powers to fix your mistake! So teleport out, if you can. Or get someone else —if you can find someone —to let you out.” Adam would be neither violating Zelda’s rights to external property nor excessively punishing her in this case; nor would he be invasively vio- lating her self-ownership rights. But wouldn’t he still be committing an injustice, however noninvasively? Don’t we need something like the SOP to explain why this is so? The barrier examples, for their part, do not require Zelda’s walking and falling asleep on virgin territory, which thus (arguably) becomes her prop- erty. We can, to appeal to the sort of science-fiction scenario beloved of philosophers, imagine instead a bizarre chance disruption of the structure of space-time that teleports Zelda into Adam’s plastic shell or into the midst of the knuckle-scrapers. There is no question now of their violating her property rights; yet don’t they still commit an injustice by nullifying her self-owned powers in refusing to allow her to exit? Consider a parallel example concerning property ownership itself. If your prized $50,000 copy of Captain America Comics number 1, due to another rupture in space-time or just to a particularly strong wind that blows it out of your hands and through my window, suddenly appears on the floor of my living room, do I have the right to refuse to bring it back out to you or to allow you to come in and get it? Suppose I attempt to justify my refusal by saying, “I won’t touch it, and you’re free to have it back if you can arrange another space-time rupture or gust of wind. But I refuse to exert my self-owned powers to bring it out to you, or to allow you on my property to get it. I never asked for it to appear in my living room, after all!” Would anyone accept this justification? Doesn’t your property right in the comic book require me to give it back to you? The hard-liner might suggest that this example transports the SOP advocate out of the frying pan and into the fire. For if the SOP is true, wouldn’t we also have to commit ourselves to a “property-ownership proviso” (POP) that requires us not to nullify anyone’s ability to use his external private property in a way consistent with its “world-interactive powers”? If I build a miniature submarine in my garage, and you have the only swimming pool within one thousand miles, must you allow me the use of your pool lest you nullify my ability to use the sub? If (to take an example of Cohen’s cited by Mack) I own a corkscrew, must I be provided with wine bottles to open lest the corkscrew sadly fail to fulfill its full potential?34 Mack’s response to this line of thought seems basically to amount to a bit of backpedaling on the claim that his proviso really follows from the notion of self-ownership per se —so as to avoid the conclusion that a (rather unlibertarian and presumably redistributionist) POP would also, in par- allel fashion, follow from the concept of property ownership. His response seems, instead, to emphasize the idea that the considerations favoring self-ownership also favor, via an independent line of reasoning, the SOP.35 In my view, however, a better response would be one that took note of some relevant disanalogies between property in oneself and property in external things. Note first that the self-owned world-interactive powers, the possible use of which the SOP is intended to guarantee, are possessed by a living being who is undergoing development, which involves passing through various stages; therefore, these powers are ones that flourish with use and atrophy or even disappear with disuse.36 To nullify these powers even for a limited time, then, is (very often at least) not merely temporarily to inconvenience their owner, but, rather, to bring about a permanent reduc- tion or even disablement of these powers. By contrast, a submarine (or a corkscrew) retains its powers even when left indefinitely in a garage (or a drawer). This difference in the effect that nullification has on self-owned powers versus extra-personal property plausibly justifies a difference in our judgments concerning the acceptability, from the point of view of justice, of such nullification in the two cases; that is, it justifies adoption of the SOP but not of the POP.37 Second, there is an element of choice (and in particular, of voluntary acquisition) where extra-personal property is concerned that is morally relevant here. One’s self-owned powers, along with the SOP-guaranteed right to the non-nullification of those powers, are not something one chooses or acquires; one just has them —indeed, to a great degree one just is the constellation of those powers, abilities, etc.—and owns them fully. By contrast, extra-personal property is something one chooses to acquire or not to acquire, and as we have seen, one always acquires property rights in various degrees, from partial to full ownership—and this would include the rights guaranteed by a POP. If one chooses to acquire a corkscrew under conditions where wine bottles are unavailable, or are even likely at some point to become unavailable, one can hardly blame others if one finds oneself bottle-less. To fail to acquire POP-like rights regarding the corkscrew (by, say, contracting with someone else to provide one with wine bottles in perpetuity) is not the same thing as to have those rights and then have them violated. Someone who buys a corkscrew and then finds that he cannot use it is like the person who acquires only partial property rights in a water hole that others have already acquired partial use rights over. He cannot complain that his co-owners have violated his rights; he never acquired those other rights in the first place. Similarly, the corkscrew owner cannot complain that he has no bottles to open; he never acquired the right to those bottles, only to the corkscrew. If full ownership of a corkscrew requires POP-like rights over it, then all that follows is that corkscrew owners who lack bottles are not full owners of their corkscrews.

## Case

#### Economic data restricts biases, promotes critical thinking, and prevents flawed decision-making errors---rejecting economists plagues public discourse with innumeracy that results in worse outcomes.

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But such misjudgments don’t justify the charges leveled at economists. Take, for example, their inability to predict financial meltdowns. Crises almost by definition are unpredictable. In a recent essay, Ricardo Reis, an economist at the London School of Economics, argues that failing to foretell a financial crash is no more an indictment of economics than failing to predict when a patient will die is an indictment of medicine. Economists didn’t predict the financial crisis, Prof. Reis notes, but they did help to arrest it by applying theory and experience: “The economy did not die, and a Great Depression was avoided, in no small part due to the advances of economics over many decades.” Another caricature of economists is that they try to emulate physicists, fetishizing elegant, abstract mathematical models disconnected from economic reality. Paul Romer, the chief economist at the World Bank, derisively calls this approach “mathiness.” The critique is certainly fair in some corners of academia, but it is increasingly untrue of the profession as a whole. In 1963, roughly half the papers published in the top three American economics journals were theoretical, according to a tally by Daniel Hamermesh, now at Royal Holloway, University of London. By 2011, that figure had shrunk to 28%; the remainder were empirical papers based on public data, on data gathered by the authors or on experiments. Economic debates these days are won not by the best theory but by the best data: Statistics are more important than calculus. Economists are far more obsessed with measurement than with math. When public discourse is plagued by innumeracy, this capacity to count is no small thing. Economists are also instinctively skeptical of simple explanations. They are trained to look for equilibrium, which is another way of saying, “When you change one thing, how do other things respond? Where do things settle once all interactions have occurred?” Advocates for a higher minimum wage extol the benefits to workers. Economists ask: Will it change employers’ demand for workers who earn the minimum wage? Or what they pay workers who earn just above the minimum? Or the prices they charge, or how much market share they lose to companies that don’t face the higher minimum or how much they invest in automation? Does it reduce turnover and thus make workers more productive? Advocates of tariffs on imported steel focus on the benefit to domestic steelmakers and their workers. But economists ask: What happens to steel-consuming companies that now face higher prices, as well as to their workers and customers? Does penalizing imports boost the dollar and hurt U.S. exports? The more data economists collect, the better they can map such complex interactions. Seemingly simple questions seldom have simple answers. A higher minimum wage helps workers in some circumstances but hurts them in others. Tariffs help some workers but hurt many others. Global warming will do some economic harm, but not enough to justify banning fossil fuels. Sometimes, this attachment to numbers conveys a false precision. Critics say that the Congressional Budget Office overestimated how many people would get insurance under Obamacare and must therefore be overestimating how many will lose it if the law were to be replaced. But the CBO always warned that its estimates were highly uncertain; what no economists doubted, including those working in Mr. Trump’s administration, is that the number would be large. Economists could confidently predict that price controls would lead to shortages in Venezuela, though not how severe they would be. Non-economists see all this as hopeless equivocation, but it is actually the way that evidence drives science. Economists still have their ideological leanings, but data has helped to restrict these biases. Surveys of top academic economists by the University of Chicago show considerable agreement, even among liberals and conservatives. For example, the scholars almost all agree that fiscal stimulus reduced unemployment after the last recession and that trade with China benefits Americans by providing them with cheap goods. A study by Gordon Dahl and Roger Gordon of the University of California, San Diego, found that disagreement among economists was greatest where the empirical research was most sparse, as with the issue of whether natural-gas fracking helps U.S. exports. Though economics remains an imperfect science, it has come a long way in 200 years. Its greatest challenge today isn’t the quality of the analysis it supplies, but whether there is still sufficient demand for it.

#### No alternative to growth for emissions – EKC is true for developed countries – their datasets include countries that haven’t reached the tipping point.

Acaravci and Akalin 17 [Ali Acaravci & Guray Akalin 17. 1 Faculty of Economics and Administrative Sciences, Mustafa Kemal University. 2017. “Environment–economic Growth Nexus: A Comparative Analysis of Developed and Developing Countries.” International Journal of Energy Economics and Policy, vol. 7, no. 5, pp. 34–43.] Recut Jet

6. CONCLUSIONS AND POLICY IMPLICATIONS Since the early 1970s, especially after the United Nations Conference on the Human Environment in 1972, the relationship between production and environmental concerns has been handled by different methods in different disciplines. This is because the environment is of vital importance for human life, and they are confronted with serious environmental problems. The most important of these problems are as follows: The risk of going over the environmental pollution assimilation capacity; the difficulty in return of natural balance in the environment; large-scale health problems caused by environmental pollution; rapid depletion of natural resources; global warming and climate change, and the resulting related natural disasters such as floods; the reduction of biodiversity, air pollution, and soil pollution. Empirical studies on the environmental pollution–economic growth nexus explore the validity of the EKC hypothesis which states that environmental pollution will increase up to a certain threshold of income growth, and after this threshold, will begin to decrease due to the demand for a clean environment and structural and technological inputs. If the EKC hypothesis is valid, economic growth is both cause of and solution to environmental pollution. This approach is often used when arguing that countries should not compromise economic growth policies to reduce environmental effects. The EKC hypothesis is not valid in cases where economic growth that increased production is the only cause of environmental pollution. This has accelerated the search to replace the neoclassical growth strategy. Especially highlighted by the 1992 UNCED conference in Rio de Janeiro, a win-win approach to understanding the appropriate account of the ecological paradigm has gained importance in recent years. Therefore, the validity of the EKC hypothesis is an important issue in formulating economic growth policies for all countries. In this study, the following two samples are used: (i) 40 highincome countries (OECD members and non-members) and (ii) 33 upper middle-income countries. These countries are selected according to data available from related income groups. The results from the dynamic panel data methods are as follows: (i) The Durbin–Hausman cointegration test shows that there is a long-term relationship between variables. (ii) The results from the CCE estimator indicate that there is evidence of validity of the EKC hypothesis in developed countries. (iii) The EKC hypothesis is not valid in the developing countries. These results show that economic growth is sufficient enough to safeguard environmental quality for developed countries. However, developing countries have not yet reached income levels high enough to be able to derive their turning points. Therefore, to reduce environmental pollution that comes with economic growth, developing countries should give importance to R&D activities and institutionalization of environmental awareness. An increase in environmental awareness is imperative and developing and developed countries must not forget the fact that the natural world of tomorrow will be created today. Also, our findings show that trade liberalization is not harmful for the environment in developed and developing countries. This means that the increase of trade volume will not produce more carbon emissions. Despite the results obtained for the developed countries, we cannot assume that environmental betterment will continue to accompany further growth of per capita income in developed countries. So that, future studies can examine the relationship between economic growth and other pollutants. Because, along with the economic growth it may increase the amount of other pollutants.

#### Capitalism causes dematerialization which solves sustainability questions

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Some people claim that we need to cut our consumption or there will be no hope for the planet. Such claims are based on the thesis that continued growth increases the rate at which the earth’s finite resources are consumed and, moreover, leads to irreversible climate change. And such warnings are by no means new. In 1970, for instance, the Club of Rome attracted a great deal of attention with the publication of The Limits to Growth. A Report for the Club of Rome’s Project on the Predicament of Mankind, which has to date sold more than thirty million copies in thirty languages. The book warned people to change their ways and had a clear message: the world’s raw materials, and in particular, oil would soon be used up. In twenty years, the scientists predicted, we would have used the very last drop of oil. Of course, the Club of Rome’s models for the depletion of oil—and almost all other major raw materials—were wrong. According to the scenarios presented in The Limits to Growth, we should now be living on a planet that has been devoid of natural gas, copper, lead, aluminum and tungsten for decades. And we were supposed to have run out of silver in 1985. Despite the bleak forecasts, as of January 2020, the United States Geological Survey estimated silver reserves worldwide at 560,000 tons. Employing an extensive array of data, the American scientist Andrew McAfee proves in his book More from Less that economic growth is no longer coupled to the consumption of raw materials. Data for the United States, for example, show that of seventy-two resources, from aluminum to zinc, only six are not yet post-peak. Nevertheless, despite the fact that the U.S. economy has grown strongly in recent years, consumption of many commodities is actually decreasing. Back in 2015, the American environmental scientist Jesse Ausubel wrote an essay, “The Return of Nature: How Technology Liberates the Environment,” showing that Americans are consuming fewer and fewer raw materials per capita. Total consumption of steel, copper, fertilizer, wood and paper, which had previously always risen in line with economic growth, had plateaued and was now in constant decline. Such across-the-board reductions in natural resource consumption are only possible because of much-maligned capitalism: companies are constantly developing more efficient production methods and reducing the amount of raw materials they consume. Of course, they are not doing this primarily to protect the environment but to cut costs. What's more, a constant stream of innovations has promoted the trend of miniaturization or dematerialization. Just think of your smartphone. How many devices has your smartphone replaced and how many raw materials did they use to consume? Nowadays, many people no longer have a fax machine or street atlas because they have everything they need on their smartphone. Some even use their phones instead of a wristwatch. You used to need four separate microphones in your telephone, cassette recorder, Dictaphone and video camera, today you just need one—in your smartphone. The finite nature of the world’s natural resources is one argument against growth, climate change is another. Let’s take China as an example: China currently emits more CO2 than any other country in the world and is building a number of new nuclear power plants in order to achieve carbon neutrality by 2060. With the new build program well underway, China’s first new-generation nuclear power plant recently went into operation. In the very near future, China intends to start exporting power plants. The latest generation of nuclear power plants is much safer than earlier models—and can play a pivotal role in the fight against climate change. In the United States, Joe Biden is already evaluating the advantages of small modular reactor (SMR) nuclear power plants. As the name suggests, SMRs are smaller than traditional nuclear fission reactors and offer a maximum capacity of three hundred megawatts. In the United Kingdom, for example, a consortium led by Rolls-Royce has announced plans to build up to sixteen SMR power plants. So far, two reactors of this type are in operation, both onboard the floating nuclear power plant “Akademik Lomonosov, which supplies heat and electricity to the Siberian city of Pevec and its one hundred thousand inhabitants. Anticapitalists blame capitalism for resource consumption and climate change. But political decisions—such as Germany’s decision to phase out nuclear energy—frequently have a negative impact on climate change. Telling people to cut their consumption must seem like pure mockery to the hundreds of millions of people around the world who are still living in extreme poverty. What they need is more capitalism and economic growth. Just like in China, where the number of people living in extreme poverty has fallen from 88 percent in 1981 to less than 1 percent today. Andrew McAfee’s book has an optimistic message about how we don't have to turn back the clocks and cut our consumption: capitalism and technological progress are allowing us to steward the world’s resources, rather than stripping them bare.

#### It’s sustainable – data proves we’re entering the golden age

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The past 30 years have seen immense progress **in improving the quality of life for much of humanity**. Extreme poverty — the number of people living on less than $1.90 per day — has fallen by nearly two-thirds, from 1.9 **billion to** around 650 **million**. Life expectancy has risen in most of the world, along with literacy and access to education, while infant mortality has fallen. Despite perceptions to the contrary, **the average person born today is likely to have access to more opportunities and have a better quality of life than at any other point in human history**. Much of this increase in human wellbeing has been propelled by rapid economic growth driven largely by state-led industrial policy, particularly in poor-to-middle income countries. However, this growth has come at a cost: between 1990 and 2019, global emissions of CO2 **increased by 56%.** Historically, economic growth has been closely linked to increased energy consumption — and increased CO2 emissions in particular — leading some to argue that a more prosperous world is one that necessarily has more impacts on our natural environment and climate. There is a lively academic debate about our ability to “absolutely decouple” emissions and growth — that is, the extent to which the adoption of clean energy technology can allow emissions to decline while economic growth continues. Over the past 15 years, however, **something has begun to change.** Rather than a 21st century dominated by coal that energy modelers foresaw, **global coal use peaked in 2013 and is now in structural decline**. We have succeeded in making clean energy cheap, with solar power and battery storage costs falling 10-fold since 2009. The world produced more electricity from clean energy — solar, wind, hydro, and nuclear — than from coal over the past two years. And, according to some major oil companies, **peak oil is upon us** — not because we have run out of cheap oil to produce, but because demand is falling and companies expect further decline as consumers increasingly shift to electric vehicles. The world has long been experiencing a relative **decoupling** between economic growth and CO2 emissions, with the emissions per unit of GDP **falling for the past 60 years**. This is the case even in countries like **India and China** that have been undergoing rapid economic growth. But relative decoupling alone is inadequate in a world where global CO2 emissions need to peak and decline in the next decade to give us any chance at limiting warming to well below 2℃, in line with Paris Agreement targets. Thankfully, there is increasing evidence that the world is on track **to absolutely decouple CO2 emissions and economic growth** — with global CO2 emissions potentially having peaked in 2019 **and unlikely to increase substantially in the coming decade**. While an emissions peak is just the first and easiest step towards eventually reaching the net-zero emissions required to stop the world from continuing to warm, it demonstrates that linkages between emissions and economic activity are not an immutable law, but rather simply a result of our current means of energy production. In recent years we have seen more and more examples of absolute decoupling — economic growth accompanied by falling CO2 emissions. Since 2005, 32 countries with a population of at least one million people **have absolutely decoupled** emissions from economic growth, both for terrestrial emissions (those within national borders) and consumption emissions (emissions embodied in the goods consumed in a country). This includes the United States, Japan, Mexico, Germany, United Kingdom, France, Spain, Poland, Romania, Netherlands, Belgium, Portugal, Sweden, Hungary, Belarus, Austria, Bulgaria, El Salvador, Singapore, Denmark, Finland, Slovakia, Norway, Ireland, New Zealand, Croatia, Jamaica, Lithuania, Slovenia, Latvia, Estonia, and Cyprus. Figure 1, below, shows the declines in territorial emissions (blue) and increases in GDP (red). To qualify as having experienced absolute decoupling, we require countries included in this analysis to pass four separate filters: a population of at least one million (to focus the analysis on more representative cases), declining territorial emissions over the 2005-2019 period (based on a linear regression), declining consumption emissions, and increasing real GDP (on a purchasing power parity basis, using constant 2017 international $USD). We chose not to include 2020 in this analysis because it is not particularly representative of longer-term trends, and consumption and territorial emissions estimates are not yet available for many countries. There is a wide range of rates of economic growth between 2005-2019 among countries experiencing absolute decoupling. Somewhat counterintuitively, there is no significant relationship between the rate of economic growth and the magnitude of emissions reductions within the group. **While it is unlikely that there is not at least some linkage between the two factors, there are plenty of examples of countries (e.g., Singapore, Romania, and Ireland) experiencing both extremely rapid economic growth and large reductions in CO2 emissions.** One of the primary criticisms of some prior analyses of absolute decoupling is that they ignore **leakage**. Specifically, the offshoring of manufacturing from high-income countries over the past three decades to countries like China has led to “illusory” drops in emissions, where the emissions associated with high-income country consumption are simply shipped overseas and no longer show up in territorial emissions accounting. There is some truth in this critique, as there was a large increase in emissions embodied in imports from developing countries between 1990 and 2005. After 2005, however, structural changes in China and a growing domestic market led to a reversal of these trends; the amount of emissions “exported” from developed countries to developing countries **has actually declined over the past 15 years.** This means that, for many countries, both territorial emissions and consumption emissions (which include any emissions “exported” to other countries) **have jointly declined**. In fact, on average, consumption emissions have been declining slightly faster than territorial emissions since 2005 in the 32 countries we identify as experiencing absolute decoupling. Figure 2, below, shows the change in consumption emissions (teal) and GDP (red) between 2005 and 2019. There is a pretty wide variation in the extent to which these countries have reduced their territorial and consumption emissions since 2005. Some countries — such as the UK, Denmark, Finland, and Singapore – have seen territorial emissions fall faster than consumption emissions, while the US, Japan, Germany, and Spain (among others) have seen consumption emissions fall faster. Figure 3 shows reductions in consumption and territorial emissions for each country, with the size of the dot representing the size of the population in 2019. **Absolute decoupling is possible.** There is no physical law requiring economic growth — and broader increases in human wellbeing — to necessarily be linked to CO2 emissions. All of the **services that we rely on today that emit fossil fuels** — electricity, transportation, heating, food — can in principle **be replaced by near-zero carbon alternatives**, though these are more mature in some sectors (electricity, transportation, buildings) than in others (industrial processes, agriculture).

#### Tech dematerialization secures sustainability.

**McAfee 19**, \*Andrew Paul McAfee, a principal research scientist at MIT, is cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management; (2019, “More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources and What Happens Next”, https://b-ok.cc/book/5327561/8acdbe)

There is **no shortage** of examples of dematerialization. I chose the ones in this chapter because they illustrate a set of fundamental principles at the intersection of business, economics, innovation, and our impact on our planet. They are:

We do want more all the time, but **not more resources**. Alfred Marshall was right, but William Jevons was wrong. Our wants and desires keep growing, evidently without end, and therefore so do our economies. But our use of the earth’s resources **does not**. We do want more beverage options, but we don’t want to keep using more aluminum in drink cans. We want to communicate and compute and listen to music, but we don’t want an arsenal of gadgets; we’re happy with a single smartphone. As our population increases, we want more food, but we don’t have any desire to consume more fertilizer or use more land for crops.

Jevons was correct at the time he wrote that total British demand for coal was increasing even though steam engines were becoming much more efficient. He was right, in other words, that the price elasticity of demand for coal-supplied power was greater than one in the 1860s. But he was wrong to conclude that this would be permanent. Elasticities of demand can change over time for several reasons, the most fundamental of which is **technological change**. Coal provides a clear example of this. When fracking made natural gas much cheaper, total **demand** for coal in the United States **went down** even though its price decreased.

With the help of **innovation** and **new technologies**, economic growth in America and other rich countries—growth in all of the wants and needs that we spend money on—has become **decoupled** from resource **consumption**. This is a recent development and a **profound** one.

Materials cost money that companies locked in competition would rather **not spend**. The root of Jevons’s mistake is simple and **boring**: resources cost **money**. He realized this, of course. What he didn’t sufficiently realize was how strong the **incentive** is for a company in a contested market to **reduce** its spending on **resources** (or anything else) and so eke out a bit more profit. After all, a penny saved is a penny earned.

Monopolists can just pass costs on to their customers, but companies with a lot of competitors can’t. So American farmers who battle with each other (and increasingly with tough rivals in other countries) are eager to cut their spending on land, water, and fertilizer. Beer and soda companies want to minimize their aluminum purchases. Producers of magnets and high-tech gear run away from REE as soon as prices start to spike. In the United States, the 1980 Staggers Act removed government subsidies for freight-hauling railroads, forcing them into **competition** and **cost cutting** and making them all the more eager to not have expensive railcars sit idle. Again and again, we see that **competition** spurs **dematerialization**.

There are multiple paths to dematerialization. As profit-hungry companies seek to use fewer resources, they can go down four main paths. First, they can simply find ways to use **less** of a **given material**. This is what happened as beverage companies and the companies that supply them with cans teamed up to use less aluminum. It’s also the story with American farmers, who keep getting bigger harvests while using less land, water, and fertilizer. Magnet makers found ways to use fewer rare earth metals when it looked as if China might cut off their supply.

Second, it often becomes possible to **substitute** one resource for **another**. Total US coal consumption started to decrease after 2007 because fracking made natural gas more attractive to electricity generators. If nuclear power becomes more popular in the United States (a topic we’ll take up in chapter 15), we could use both less coal and less gas and generate our electricity from a small amount of material indeed. A kilogram of uranium-235 fuel contains approximately 2–3 million times as much energy as the same mass of coal or oil. According to one estimate, the total amount of energy that humans consume each year could be supplied by just seven thousand tons of uranium fuel.

Third, companies can use **fewer molecules** overall by making better use of the materials they **already own**. Improving CNW’s railcar utilization from 5 percent to 10 percent would mean that the company could cut its stock of these thirty-ton behemoths in half. Companies that own expensive physical assets tend to be fanatics about getting as much use as possible out of them, for clear and compelling financial reasons. For example, the world’s commercial airlines have improved their load factors—essentially the percentage of seats occupied on flights—from 56 percent in 1971 to more than 81 percent in 2018.

Finally, some materials get replaced by **nothing** at all. When a telephone, camcorder, and tape recorder are separate devices, three total microphones are needed. When they all collapse into a smartphone, only one microphone is necessary. That smartphone also uses no audiotapes, videotapes, compact discs, or camera film. The iPhone and its descendants are among the world champions of dematerialization. They use vastly less metal, plastic, glass, and silicon than did the devices they have replaced and don’t need media such as paper, discs, tape, or film.

If we use more renewable energy, we’ll be replacing coal, gas, oil, and uranium with **photons** from the **sun** (solar power) and the **movement** of **air** (wind power) and water (hydroelectric power) on the earth. All three of these types of power are also among dematerialization’s **champions**, since they use up essentially **no resources** once they’re up and running.

I call these four paths to dematerialization slim, swap, optimize, and evaporate. They’re not mutually exclusive. Companies can and do pursue all four at the same time, and all four are going on all the time in ways both obvious and subtle.

Innovation is **hard** to **foresee**. Neither the fracking revolution nor the world-changing impact of the iPhone’s introduction were well understood in advance. Both continued to be underestimated even after they occurred. The iPhone was introduced in June of 2007, with no shortage of fanfare from Apple and Steve Jobs. Yet several months later the cover of Forbes was still asking if anyone could catch Nokia.

Innovation is not **steady** and **predictable** like the orbit of the Moon or the accumulation of interest on a certificate of deposit. It’s instead inherently jumpy, uneven, and **random**. It’s also **combinatorial**, as Erik Brynjolfsson and I discussed in our book The Second Machine Age. Most new technologies and other innovations, we argued, are combinations or recombinations of preexisting elements.

The iPhone was “just” a cellular telephone plus a bunch of sensors plus a touch screen plus an operating system and population of programs, or apps. All these elements had been around for a while before 2007. It took the vision of Steve Jobs to see what they could become when combined. Fracking was the combination of multiple abilities: to “see” where hydrocarbons were to be found in rock formations deep underground; to pump down pressurized liquid to fracture the rock; to pump up the oil and gas once they were released by the fracturing; and so on. Again, none of these was new. Their effective combination was what changed the world’s energy situation.

Erik and I described the set of innovations and technologies available at any time as **building blocks** that ingenious people could combine and recombine into useful new configurations. These new configurations then serve as more blocks that later innovators can use. Combinatorial innovation is exciting because it’s unpredictable. It’s not easy to foresee when or where powerful new combinations are going to appear, or who’s going to come up with them. But as the number of both building blocks and innovators increases, we should have **confidence** that more breakthroughs such as fracking and smartphones are ahead. Innovation is highly decentralized and largely uncoordinated, occurring as the result of **interactions** among **complex** and **interlocking** social, technological, and economic systems. So it’s going to keep surprising us.

As the Second Machine Age progresses, dematerialization **accelerates**. Erik and I coined the phrase Second Machine Age to draw a contrast with the Industrial Era, which as we’ve seen transformed the planet by allowing us to overcome the limitations of muscle power. Our current time of great progress with all things related to **computing** is allowing us to **overcome** the **limitations** of our mental power and is **transformative** in a different way: it’s allowing us to **reverse** the Industrial Era’s bad habit of taking **more** and **more** from the earth every year.

Computer-aided design tools help engineers at packaging companies design generations of aluminum cans that keep getting lighter. Fracking took off in part because oil and gas exploration companies learned how to build **accurate** computer **models** of the rock formations that lay deep underground—models that predicted where hydrocarbons were to be found.

Smartphones took the place of many separate pieces of gear. Because they serve as GPS devices, they’ve also led us to print out many fewer maps and so contributed to our current trend of using less paper. It’s easy to look at generations of computer paper, from 1960s punch cards to the eleven-by-seventeen-inch fanfold paper of the 1980s, and conclude that the Second Machine Age has caused us to chop down ever more trees. The year of peak paper consumption in the United States, however, was 1990. As our devices have become more capable and interconnected, always on and always with us, we’ve sharply turned away from paper. Humanity as a whole probably hit peak paper in 2013.

As these examples indicate, computers and their kin help us with all four paths to **dematerialization**. Hardware, software, and networks let us slim, swap, optimize, and evaporate. I contend that they’re the **best tools** we’ve **ever invented** for letting us tread more **lightly** on our planet.

All of these principles are about the **combination** of technological **progress** and **capitalism**, which are the first of the two pairs of forces causing **dematerialization**

#### No limits to growth---solar, nuclear, and fusion energy solve climate change better than degrowth

Michael Liebreich 18, Visiting Professor at Imperial College’s Energy Future Lab, “The Secret of Eternal Growth,” 10/29/18, http://ifreetrade.org/article/the\_secret\_of\_eternal\_growth\_the\_physics\_behind\_pro\_growth\_environmentalism

The earth, however, is not an isolated system. It may be nearly closed, exchanging limited matter across the planetary boundary, but it is far from isolated, as it receives a huge daily flux of energy from the sun and radiates almost as much away to space. In his book, Georgescu-Roegen even acknowledged the existence of huge solar energy fluxes, but that didn’t stop him from basing his seminal work on a scientific error. Later in his career, after ruefully acknowledging his mistake, he invented a Fourth Law of Thermodynamics, claiming that “material entropy” would forever prevent materials from being perfectly recycled. Pure fake science. Around the same time as Georgescu-Roegen was making up thermodynamic laws, a group of concerned environmentalists calling themselves the Club of Rome invited one of the doyens of the new field of computer modelling, Jay Forrester, to create a simulation of the world economy and its interaction with the environment. In 1972 his marvellous black box produced another best-seller, Limits to Growth (iv), which purported to prove that almost every combination of economic parameters ended up not just with growth slowing, but with an overshoot and collapse. This finding, so congenial to the model’s commissioners, stemmed entirely from errors in its structure, as pointed out by a then fresh-faced young economics professor at Yale, William Nordhaus. A third foundational work in the degrowth canon is Steady State Economics (v) by Herman Daly, later Senior Economist in the Environment Department of the World Bank. In it he explains that “the economy is an open subsystem of a finite and nongrowing ecosystem. Any subsystem of a finite nongrowing system must itself at some point also become nongrowing.” It’s a repeat of Georgescu-Roegen’s error. Daly must have known it too, since he noted that six days’ worth of radiation from the sun contained more useful energy (or exergy, to give it its correct name) than that embodied in all the fossil fuel reserves known at the time. The point here is not that solar power is the key to endless growth, though it could well be - nuclear fission and fusion are other strong contenders. The point is that when you scratch the surface of any of the seminal tracts of the degrowth movement, you find they are based on the same fake science, right through to the present day. Jeremy Rifkin’s 1980 Entropy: a New World View (vi) states that “here on earth material entropy is continually increasing and must ultimately reach a maximum”. In 2009, Professor Tim Jackson, the favourite anti-capitalist of the TED generation, published Prosperity Without Growth (vii). In it he pays homage to Daly’s “pioneering case for a ‘steady state economy’” and cheerfully recommends it to students hungering for alternative wisdom – either not understanding or not caring that it is based on a fallacy. This matters because, for all that the neo-liberal world economy has delivered extraordinary improvements in living standards – in life span, levels of education, infant survival, maternal health, poverty reduction, leisure, and so on (viii) – it is currently failing to address severe, systemic environmental challenges, first and foremost among them climate change. Unless the free-trade, pro-growth, pro-trade right offers a coherent plan, it is ceding the argument to the degrowth, anti-capitalist, anti-trade left. Climate change is real, serious, and urgent. That recent IPCC 1.5°C report is based on rigorous research. Of course climate change is being co-opted by the “Academic Grievance Studies” brigade (ix), but that doesn’t make the underlying physical science less real. As the world continues to burn through its remaining carbon budget, as temperatures continue to rise, as the ‘signal’ of climate damage becomes clearer against the background ‘noise’ of weather, the demand for dramatic action will only increase. Limiting the impact of climate change will require the application of technology, both new and yet-to-be-developed, on a heroic scale. Destroying the ability of the world economy to deliver these solutions is the very opposite of what we should be doing. And that is where Nordhaus and Romer come in. Romer’s great contribution was to identify the contribution of knowledge to economic growth. Before his Endogenous Growth Theory, no one could explain differences in growth rates of as much as 10 percent between countries at a similar stage of development. Romer’s work is the perfect riposte to those who think that economic growth is the same thing as ever-increasing physical material use and pollution; it is also the perfect riposte to those who believe that extractive industries can ever deliver long-term wealth and those who believe the same of agricultural subsidies and import tariffs. Nordhaus, for his part, was the creator of the first Integrated Assessment Models, bringing together the physics of climate change, its economic impact, and the functioning of the economy. He was also the first person to suggest that attaching a cost to emissions – low at first but rising – would squeeze greenhouse gases out of the economy. Nordhaus is no climate fundamentalist, famously diverging from the view propounded in the Stern Review, that the world needs super-high carbon taxes immediately. Nordhaus accepted that environmental challenges and climate change will act as a drag on the economy but, unlike others before him, he quantified the drag and showed that it is highly unlikely to reverse economic growth. Nordhaus and Romer are not the only Nobel Prize-winners whose work suggests that an open, liberal, trade-friendly economy – though one pricing in externalities – will do a better job of addressing climate change and other environmental problems than stalling or reversing economic growth. Simon Kuznets, who won the 1971 Nobel Prize for Economics (x), described how a variable can get worse in the early phases of a country’s development, and then improve as growth continues. He focused mainly on inequality, but the Environmental Kuznets Curves has been shown to govern most forms of local pollution. Ilya Prigogine won the 1977 Nobel Prize in Chemistry for his research into non-equilibrium “dissipative” structures – how a flow of energy across closed system can drive the creation of “order out of chaos” (xi). This is a real scientific expert on entropy proving that the economy can grow for as long as there is still a sun in the sky (which would give us about another five billion years).

#### Capitalism solves war – its anti-imperialist.

Mousseau 19, Michael. "The end of war: How a robust marketplace and liberal hegemony are leading to perpetual world peace." International Security 44.1 (2019): 160-196. Props to DML for finding. (Professor in the School of Politics, Security, and International Affairs at the University of Central Florida)//Elmer

Is war becoming obsolete? There is wide agreement among scholars that war has been in sharp decline since the defeat of the Axis powers in 1945, even as there is little agreement as to its cause.1 Realists reject the idea that this trend will continue, citing states' concerns with the “security dilemma”: that is, in anarchy states must assume that any state that can attack will; therefore, power equals threat, and changes in relative power result in conflict and war.2 Discussing the rise of China, Graham Allison calls this condition “Thucydides's Trap,” a reference to the ancient Greek's claim that Sparta's fear of Athens' growing power led to the Peloponnesian War.3 This article argues that there is no Thucydides Trap in international politics. Rather, the world is moving rapidly toward permanent peace, possibly in our lifetime. Drawing on economic norms theory,4 I show that what sometimes appears to be a Thucydides Trap may instead be a function of factors strictly internal to states and that these factors vary among them. In brief, leaders of states with advanced market-oriented economies have foremost interests in the principle of self-determination for all states, large and small, as the foundation for a robust global marketplace. War among these states, even making preparations for war, is not possible, because they are in a natural alliance to preserve and protect the global order. In contrast, leaders of states with weak internal markets have little interest in the global marketplace; they pursue wealth not through commerce, but through wars of expansion and demands for tribute. For these states, power equals threat, and therefore they tend to balance against the power of all states. Fearing stronger states, however, minor powers with weak internal markets tend to constrain their expansionist inclinations and, for security reasons, bandwagon with the relatively benign market-oriented powers. I argue that this liberal global hierarchy is unwittingly but systematically buttressing states' embrace of market norms and values that, if left uninterrupted, is likely to culminate in permanent world peace, perhaps even something close to harmony. My argument challenges the realist assertion that great powers are engaged in a timeless competition over global leadership, because hegemony cannot exist among great powers with weak markets; these inherently expansionist states live in constant fear and therefore normally balance against the strongest state and its allies.5 Hegemony can exist only among market-oriented powers, because only they care about global order. Yet, there can be no competition for leadership among market powers, because they always agree with the goal of their strongest member (currently the United States) to preserve and protect the global order

#### Decline shreds US China relations which are key to solve emerging existential threats

Johnson and Gramer 20 [Keith Johnson is Foreign Policy's global geoeconomics correspondent, Robbie Gramer is a diplomacy and national security reporter at Foreign Policy, covering the State Department. “The Great Decoupling”, May 14th, https://foreignpolicy.com/2020/05/14/china-us-pandemic-economy-tensions-trump-coronavirus-covid-new-cold-war-economics-the-great-decoupling/] Recut Jet

* Here, decoupling refers to decoupling with China’s economy

“What we have now through the beginnings of economic decoupling is the removal of that economic ballast in the U.S.-China relationship, which has historically differentiated it from the characteristics of the U.S.-Soviet relationship in the Cold War,” said Rudd, the former Australian prime minister.

“If we have another pandemic, or environmental issues, or financial-sector issues, or Iran, or North Korea, how effective are you going to be if you don’t have a working relationship with China?”

In concrete terms, that will likely make it harder for the United States to nudge China to make any of the reforms Washington has pushed for years, let alone to moderate its increasingly belligerent and aggressive foreign policy. “If the question is whether breaking economic ties will lead to increased friction, the answer has to be yes,” Zoellick said. “The nature of decoupling doesn’t mean the Chinese will stop” their disruptive behavior, “they will just be less concerned with norms that the United States would otherwise push.”

In other words, after almost two decades of urging, sometimes successfully, China to become a “responsible stakeholder” in the global system, as then-Deputy Secretary of State Zoellick famously urged in a 2005 speech, the United States would essentially be throwing in the towel. And, on a host of global challenges, giving up influence and engagement with the world’s largest population, second-largest economy, and a permanent member of the U.N. Security Council could undermine U.S. interests across the board, he warned.

#### US economic strength is an impact filter---creates a cap on escalation and rules governing emerging tech

Burrows 16 [Mathew Burrows, Director of the Atlantic Council’s Strategic Foresight Initiative, PhD in European History from the University of Cambridge, Appointed Director of the Analysis and Production Staff (APS) in 2010, September 2016, “Global Risks 2035: Mathew J. Burrows Foreword by Brent Scowcroft The Search for a New Normal” Atlantic Council Strategy Papers, http://espas.eu/orbis/sites/default/files/generated/document/en/Global\_Risks\_2035\_web\_0922.pdf]

The multilateralist global system that the United States and the West built after the end of the Second World War was premised on an economically strong United States and West. In 1945, the United States was the only victor that was not completely devastated. World War II had brought the country out of the Great Depression, and the US GDP constituted more than 50 percent of the world’s total. Into the twenty-first century, the members of the Group of Seven (G7) were the world’s political and economic heavyweights. It has only been in the past several years that the collective GDP of the developing world—led by China—has surpassed the developed world’s. Even as non-Western powers grow, it is psychologically hard for the West to think about relinquishing its reins. Demographically, the West has, for a long time, been in the minority. What’s more recent is the aging of the Western population (analyzed in chapter 2), which is already occurring in Japan and Europe, beginning to squeeze the availability of resources for anything but health, social security, and interest payments on debt. Unless healthcare becomes far more efficient, the US economy will be overburdened with healthcare and pension costs as the “baby boomer” generation ages. Healthcare constitutes a whopping 18 percent of the US GDP—significantly more than is the case for other industrialized countries—without necessarily providing better results. With more going to health and pensions, there will be less capacity for defense and military spending. The United States is the biggest military spender, but China is increasing its portion of worldwide military spending, while the worldwide share of European NATO members is diminishing. China’s military probably will not rival the United States’ power-projection capabilities even by 2035, but it will have greater anti-access and denial powers. In a military contest, China may never be able to deliver a knockout blow, but it could tarnish the US image of military invincibility in a conventional state-on-state contest held in its region. Equally, a confrontation that results in a Chinese humiliation could set back China’s aspirations for regional leadership, if not trigger a domestic legitimacy crisis for the Communist Party leadership. Biggest Problem Is Domestic The biggest psychological blow to ordinary Western citizens has been their sagging standard of living (more analysis in chapter 1). Despite a much better record of overall growth in the United States since the 2008 financial crisis, those with median incomes have taken a hit. Worrisome for future US growth potential has been the drop in the labor-participation rate, from the 67 percent range before the 2008 financial crisis to 62-63 percent in the years since. The labor-participation rate was destined to drop due to a growing numbers of retirees, but much of the current sharp decrease comes from unskilled males in their prime working years—forties and early fifties—dropping out. Additionally, many younger women are not entering or staying in the job market. Global Trends 2030 looked at two scenarios for future US growth—one in which the United States maintained or slightly increased its average 2.5 percent pre-2008 growth rate, or one in which growth would slow to an average of 1.5 percent a year. In the first, there would still be the global economic shift to China. On the other hand, the 2.5 percent average growth would help boost average living standards, engendering a “feel-good” factor, which would make more Americans interested in reengaging with world issues.91 Given the record of slower growth and labor-force decline since the 2008 financial crisis, the likelihood of the second scenario is increasing. That scenario anticipated lower growth rates—which accelerated declines in average living standards—making it harder to continue trade-liberalization efforts. Indeed, the IMF warned in June 2016 that the United States faces potentially significant longer-term challenges to strong and sustained growth, saying, “concerted policy actions are warranted, sooner rather than later… focusing on the causes and consequences of falling labor force participation, an increasingly polarized income distribution, high levels of poverty, and weak productivity.”92 Moreover, it is not as if traditional US partners—Europe and Japan—are doing much better. Japan and many European countries are aging faster than the United States, eliminating labor-force growth as a driver of future economic growth. Europe’s and Japan’s economic performances have been declining since the 1990s. In Europe, the public discontent with high unemployment and declining incomes has helped to spur the rise of antiestablishment far-right and populist parties that want to weaken the EU and transatlantic ties. Even in richer European countries, such as Germany, a backlash has been growing against the Transatlantic Trade and Investment Partnership (TTIP), out of fear that Europe’s rewards would be meager and European standards would be diluted. McKinsey Global Institute, for example, believes a “return to sustained growth of 2-to-3 percent” is possible for Europe, but would require many politically difficult reforms.93 These include: reducing dependence on imports (much coming from Russia) for crude oil and natural gas; fostering a more vibrant digital economy; increasing workforce participation by the elderly, women, and migrants; and promoting flexibility in labor markets. China now spends a greater share of its GDP on research and development than does Europe. The latest OECD figures show that Europe now spends even less than the rest of the OECD.94 In both the United States and Europe, there is increasing anti-immigrant sentiment despite documented economic benefits from immigration. According to EU Commission Employment Analyst Dr. Jorg Peschner, productivity, by itself, will not be enough to reverse the negative employment trend absent more immigration: “EU’s productivity growth would have to double in order to keep the EU’s economy growing at the same pace as it did before the crisis started.” For employment growth to remain positive as long as possible, improving the labor participation of women, low-educated people, and migrants will also have to be a priority. In the United States, many of the new businesses started every year are started by first- or second-generation immigrants.95 Politically, there has been a large rise in support for right-wing and populist parties in the United States and Europe, undermining traditional parties. The gaps, for example, between the leadership and supporters in the US Republican and UK Tory and Labor Parties have been particularly evident in the selection of Donald Trump as presidential candidate and the June 2016 victory of the “Leave” vote in Britain. Unfortunately, there is no end of economic disruption. The job churn will continue as more and more skills and professions are automated, also increasing the potential for more “losers” from globalization, greater political polarization, and inequality. The increased competitiveness of the developing world with the West is a particular morale buster for Western middle classes who got used to ever-increasing prosperity for themselves and succeeding generations. Adapting to a new norm of economic turbulence—more prevalent in other eras—may be one of the biggest mental hurdles for Westerners. The West is used to thinking of the “Third World,” not home, as the place where economic turmoil happens. And a Multipolar Financial Architecture, Too Historically, US and Western power has rested on having a monopoly on reserve currencies and a Westerndominated financial system. In 2035, the dollar will be the biggest reserve currency, but its share of global financial transactions is expected to drop from 60 percent today to 45 percent. The euro will probably remain the second reserve currency, while the Chinese yuan or RMB—which became a part of the IMF benchmark-currency basket in 2015—will become a third reserve currency, accounting for 10 to 15 percent of global finance in two decades’ time.96 The financial architecture will also become more regionalized. The central role played by the financial centers of New York and London will also diminish, and a multitiered financial architecture will develop. Following the UK Brexit, those centers’ share in financial intermediation will decrease, as a second pole of global finance forms in the Eurozone. A third pole will develop in East Asia and Southeast Asia. Gradually, a growing share of global financial resources will be concentrated in those regional clusters. As with the growth of regional trade, the regional clusters will be more self-encapsulated, spurred by rising domestic demand in China and other developing countries with growing middle classes. With the role of electronic money likely to grow, the traditional banking system will probably also undergo major revision, with potential impacts on governmental powers. A more multipolar reserve system and regionalized financial architecture should lessen risks and contribute to greater stability. But the large-scale technological innovations—some of which contributed to the 2008 breakdown—will continue, making global finance still volatile. Emerging-market countries with fragmentary regulatory regimes will be particularly prone to suffering financial crises. The agingpopulation factor also increases risks to public finances. This report anticipates modestly increased volatility, lower than what occurred in the global economy during the 1890s through the 1940s, but higher than in the 1950s and 1960s—more of a continuation of what has been the trend line since the mid-1980s. Are There Alternative Visions to Western Order? Four years ago, when Global Trends 2030 was published, the answer was largely no.97 Increasingly, the facts on the ground would suggest otherwise. They do not add up to a cohesive plan to substitute wholesale all Western institutions and practices. However, they clearly indicate that there are some no-go areas, particularly those connected to regime change, democracy promotion, state control over NGOs, and maintaining sovereignty. Russia and China, in particular, see themselves as great powers and, as such, believe they have special rights to dominance in their regions. However, as other powers like India develop, it is likely that they will see themselves as regional powers with inherent prerogatives. It is worth recalling the United States’ expansive Manifest Destiny and nineteenth-century Monroe Doctrine, claiming special rights to determine the future of the Western Hemisphere. The Mercator Institute for China Studies (MERICS) has been closely following Beijing’s efforts to build a network of parallel structures to existing international organizations. It has concluded that China “is not seeking to demolish or exit from current international organizations…It is constructing supplementary— in part complementary, in part competitive—channels for shaping the international order beyond Western claims to leadership.”98 As the accompanying chart indicates, China’s shadow network of alternative international structures encompasses everything from financial and economic partnerships (the Silk Road Economic Belt and the Asian Infrastructure Investment Bank) to full-blown political groupings like the Shanghai Cooperation Organization, Conference on Interaction and Confidence Building Measures in Asia (CICA), and the BRICS association of Brazil, Russia, India, China, and South Africa.99 Moreover, there is increasing cooperation among many of the emerging powers—beyond just authoritarians—to not just limit what they see as Western meddling in domestic affairs, but to go on the attack globally. According to a recent academic study, the “Big Five” authoritarian states of China, Russia, Iran, Saudi Arabia, and Venezuela “have taken more coordinated and decisive action to contain democracy on the global level.” They have sought to “alter the democracy and human-rights mechanisms of key rulesbased institutions, including the Organization of American States, the Council of Europe, the Organization for Security and Cooperation in Europe, and international bodies concerned with the governance of the Internet.”100 How durable are these preferences for nondemocracy and state control? By 2035, if not sooner (in the case of Venezuela), some of the now-authoritarian states could be liberalized, and the perceived threat posed by Western civil-society NGOs may ease. However, China and Russia are more likely than not to want to dominate their regions. Nationalism and democracy have been shown to be highly compatible. It is not clear that an even more powerful China or India would defer to Western leadership of the global order, even if both sides’ values in other areas begin to converge. What Kind of Post-Western World? Clearly, there is a need to plan for a world that will not have the West as its big economic powerhouse—a prospect hard for Western elites and publics to conceive of, despite a decade or more of publicity about the “rise of the rest.” According to a recent survey, Europeans and Americans are more comfortable with each other than they are with anybody else. Although a majority of Europeans said, in the most recent German Marshall Fund transatlantic-trends polling, that they would like to see their country take an approach more independent from the United States, both Americans and Europeans still prefer each other over more Russian or Chinese leadership in the world. The Obama administration—considered among the most multilateralist of recent administrations— campaigned hard in 2015 to convince Europeans not to join China’s proposed Asian Infrastructure and Investment Bank (AIIB). It was as if the United States was against any governance structure not “made in the USA,” even when those running the AIIB have made clear their intentions of operating with the World Bank and the Asian Development Bank. More and more, the talk among Western elites is about locking in as much as possible the status quo, which favors the West, so that it will be harder for the newcomers to overcome. The TPP was sold as a way to set the rules before China gains much more power. A former Obama administration official advised that now might be the best time to undertake UN Security Council reform, before China and other uncooperative powers become more powerful. “A new US administration may be able to advance a proposal to address the Security Council’s anachronistic makeup while perpetuating a council that Washington can work with.”101 For Westerners, the challenge will be to plan for a future that will not be solely run by them, but which they can live with. Handovers have been historically difficult and fraught—more often than not, decided by bloody contests. One could envisage different scenarios, some already described in the earlier chapter on conflict, of military contests between the United States and China, or the United States and China with Russia, or the United States with NATO against Russia. Without delivering a knockout blow by one side or the other, these contests would most likely pit West against East, creating something akin to a new Cold War. Even if there were a knockout blow by the United States against China, it is hard to imagine a defeated China deferring permanently to the West. Its population has been imbued with such a narrative about the injustices by the West against China that any defeat or setback would be confirmation that the United States and West are dead set against a rising China. Perhaps the most harmful effect of such a contest would be to convince both sides that neither is trustworthy. For the non-West, it would confirm the suspicion that the West does not want to relinquish its leadership position. For the West, it would make it harder to ever reach out and help establish a truly global system. Need for a Second-Generation US and Western Leadership Model War is not, and should not be, inevitable as the West struggles with the growing clout of China and other developing states on the world stage. Unlike during other transitions, the tools exist for ensuring more peaceful outcomes. They will require Western acquiescence to greater roles for the developing world to set and implement new rules of the road for the international order. A key feature of the post-1945 US design for the world order is its multilateralist structures. Many of these operate below most people’s radar. This plumbing of the international system has enabled the daily functioning of globalization. To keep it viable, China, as well as other developing countries, must be accorded more representation. There are too many long-term risks involved, for example, in China having only the equivalent of France’s voting rights in the IMF, when it is the first or second economic power in the world. This is how resentments are nurtured—all the more dangerous in China’s case because of its underlying “century of humiliation” mental complex. As emerging technologies come online, the lack of a truly global institutional framework could be particularly dangerous. Assuring the future security of the Internet is particularly important in this regard, because all the new emerging technologies—bio, 3D printing, robotics, big data—take for granted a secure, global Internet. Everyone loses if cyber crime and cyber terrorism undermine the Internet. In the worstcase scenarios, in which cyber crime proliferates or strong national borders fragment the Internet, an Atlantic Council study, as mentioned, found that the economic costs could be as much as $90 trillion out to 2030, in addition to the risk of open conflict.102 Besides bringing the emerging powers into leadership roles in the panoply of multilateral institutions, the United States will need to temper its often “exemptionalist” stance to ensure the survival of the multilateralist order. According to the Council on Foreign Relations’ Patrick Stewart, a prominent scholar of global governance, one of the persistent paradoxes of the post-1945 decades has been that the “United States is at once the world’s most vocal champion of a rules-based international order and the power most insistent on opting out of the constraints that it hopes to see binding on others.”103 No country has the networks and connections that the United States does, but the system is now polycentric, rather than unipolar, and others resent the “exceptional” privileges that the United States claims. The Global Trends works have talked about the need for a new model of US global leadership. The United States needs to be guiding the international system as a “first among equals,” and willing to play by its own rules. Paradoxically, there is likely to be no vibrant global-governance system without US and Western leadership, but too much domineering behavior could doom it. Even if the United States adapted its global role, this is not to say that the tensions and differences with many emerging powers would all disappear, or that the governance system would function seamlessly. In addition to the growing number of new state actors, the increasing importance of nonstate actors adds a new complexity to the functioning of global institutions. Moreover, there are clear-cut differences between the West and emerging powers on values-based issues, such as democracy promotion and the responsibility to protect. Many developing-country publics still resent Western colonialism and equate any intrusion with past historical wrong. They point to the 2011 humanitarian intervention in Libya, for example, as cover for the Western goal of regime change. Hence, the UN Security Council failure to stop the fighting in Syria, with more than two hundred thousand killed and 7.6 million displaced. Russia and China want to make a stand against the United States and the West getting their way and ousting the Assad regime. On the other hand, the lack of a solution smacks more of anarchy than global governance. Certainly, it shows one of the gaps that remains, and likely will remain, limiting global governance because of differences in values. The speed with which new technologies are coming online and becoming an important political, military, and economic tool—for both good and bad—carries big risks for global governance. Stewart Patrick lists four potential new technologies that “cry out for regulation”: geoengineering, drones, synthetic biology, and nanotechnology. Without some setting of rules for their operation, there is the risk of major disruptions, if not catastrophes, stemming from their abuse. The recent advances in synthetic biology lower the bar to abuse by amateurs and terrorists alike, forever affecting human DNA. Geoengineering involves planetaryscale interventions that could interfere with complex climatic systems. However cumbersome, politically unpopular, and ineffective at times, there is little alternative to increased global cooperation if one does not want to see higher risks of conflict and economic degradation. Without some sort of bolstered global governance, the West would end up with less sovereignty in a “dog-eat-dog” world, in which it was increasingly in the minority. But can the United States and the West rise to the challenge of investing in a global-governance system that will not always favor their interests on every issue? Historically, the United States could be especially generous because it was on top of the world in about everything after the Second World War. Europeans came to truly believe in pooling sovereignty and joint governance after centuries of internecine conflict. The tough economic times at home have seen US and European publics become distrustful of overarching multilateral institutions, believing the will of the United States or individual European countries will not be served. It is oftentimes easier for political leaders to fall in with the public mood rather than display leadership that might appear to work against it. Over time, economic power will also be consolidated in Asia, replicating the situation three centuries ago, when China and India were the biggest economic powers in the world, and the center of the global economy was in the East. Over a longer term, one could also see a concentration in just three countries: The breakdown of the post-Cold War political and security order is irrevocable. Not only are there new powers—particularly China—that do not share the West’s vision of a liberal order, but Western publics themselves have turned against globalization, which has been the overall megatrend of the past three decades. The geopolitical landscape ahead will be much different. The best case is looking at multipolarity with limited multilateralism. In the worst case, that multipolarity evolves into bipolarity with China, Russia, and their partners pitted against the United States, Europe, Japan, and other allies. In that scenario, conflict would be almost inevitable.

#### Unregulated emerging tech causes extinction.

Tate et al. 15 – (Jitendra S. Tate, Ph.D., Mechanical Engineering, M.S. & B.S., Mechanical Engineering; Sergio Espinoza; Davontae Habbit; Craig Hanks; Walk Trybula; Dominick Fazarro; “JOTS v41n1 - Military And National Security Implications Of Nanotechnology”; Virginia Tech University Press; D.A. June 24th 2020, [Published Spring 2015]; <https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html>) //LFS—JCM

The purpose of country’s armed forces is to provide protection from foreign threats and from internal conflict. On the other hand, they may also harm a society by engaging in counter- productive warfare or serving as an economic burden. Expenditures on science and technology to develop weapons and systems sometimes produces side benefits, such as new medicines, technologies, or materials. Being ahead in military technology provides an important advantage in armed conflict. Thus, all potential opponents have a strong motive for military research and development. From the perspective of international security and arms control it appears that in depth studies of the social science of these implications has hardly begun. Warnings about this emerging technology have been sounded against excessive promises made too soon. The public may be too caught up with a “nanohype” ( [Gubrud & Altmann, 2002](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#gubrud)). It is essential to address questions of possible dangers arising from military use of nanotechnology and its impacts on national security. Their consequences need to be analyzed.

NT and Preventative Arms Control  
Background

The goal of preventive arms control is to limit how the development of future weapons could create horrific situations, as seen in the past world wars. A qualitative method here is to design boundaries which could limit the creation of new military technologies before they are ever deployed or even thought of. One criterion regards arms control and how the development of military and surveillance technologies could go beyond the limits of international law warfare and control agreements. This could include autonomous fighting war machines failing to define combatants of either side and Biological weapons could possibly give terrorist circumvention over existing treaties ( [Altmann & Gubrud, Military, arms control, and security aspects of nanotechnology, 2004](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#altmann5)). The second criterion is to prevent destabilization of the military situation which emerging technologies could make response times in battle much faster. Who will strike first? The third criterion, according to Altman & Gubrud, is how to consider unintended hazards to humans, the environment, and society. Nanoscience is paving the way for smaller more efficient systems which could leak into civilian sectors that could bring risks to human health and personal data. Concrete data on how this will affect humans or the environment is still uncertain.

Arms Control Agreements  
The development of smaller chemical or biological weapons that may contain less to no metal could potentially violate existing international laws of warfare by becoming virtually undetectable. Smaller weapons could fall into categories that would undermine peace treaties. The manipulation of these weapons by terrorist could give a better opportunity to select specific targets for assassination. Anti- satellite attacks by smaller more autonomous satellites could potentially destabilize the space situation. Therefore a comprehensive ban on space weapons should be established ( [Altmann & Gubrud, 2002](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#altmann3)). Autonomous robots with a degree of artificial intelligence will potentially bring great problems. The ability to identify a soldiers current situation such as a plea for surrender, a call for medical attention, or illness is a a very complicated tasks that to an extent requires human intelligence. This could potentially violate humanitarian law.

Stability  
New weapons could pressure the military to prevent attacks by pursuing the development of new technologies faster. This could lead to an arms race with other nations trying to attain the same goal. Destabilization may occur through faster action, and more available nano systems. Vehicles will become much lighter and will be used for surveillance. This will significantly reduce time to acquire a targets location. Medical devices implanted in soldiers’ bodies will enable the release of drugs that influence mood and response times. For example, an implant that attaches to the brains nervous system could give the possibility to reduce reaction time by processing information much faster than usual ( [Altmann & Gubrud, Anticipating military nanotechnology, 2004](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#altmann4)). Artificial intelligence based genetic algorithms could make tactical decisions much faster through computational power by adapting to a situations decision. Nano robots could eavesdrop, manipulate or even destroy targets while at the same time being undetected ( [Altmann J. , Military Uses of Nanotechnology: Perspectives and Concerns, 2004](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#altmann1)).

Environment Society & Humans  
Human beings have always been exposed to natural reoccurring nanomaterials in nature. These particles may enter the human body through respiration, and ingestion ( [Bennet- Woods, 2008](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#bennet)). Little been known about how manufactured nanoscale materials will have an impact to the environment. Jerome (2005) argues that nanomaterials used for military uniforms could break of and enter the body and environment. New materials could destroy species of plants and animal. Fumes from fuel additives could be inhaled by military personnel. Contaminant due to weapon blasts could lead to diseases such as cancer or leukemia due to absorption through the skin or inhalation. Improper disposal of batteries using nano particles could also affect a wide variety of species. An increase in nanoparticle release into the environment could be aided by waste streams from military research facilities. Advanced nuclear weapons that are miniaturized may leave large areas of soil contaminated with radioactive materials. There is an increase in toxicity as the particle size decrease which could cause unknown environmental changes. Bennet-woods ( [2008](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#bennet)) argues that there is great uncertainty in which the way nano materials will degrade under natural conditions and interact with local organisms in the environment.

Danger to society could greatly be affected due to self-replicating, mutating, mechanical or biological plagues. In the event that these intelligent nano systems were to be unleashed, they could potentially attack the physical world. There are a number of applications that will be developed with nanotechnology that could potentially crossover from the military to national security that can harm the civilian sector ( [Bennet-Woods, 2008](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#bennet)). There is a heightened awareness that new technologies will allow for a more efficient access to personal privacy and autonomy ( [Roco & Bainbridge, 2005](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#roco2)). Concerns regarding artificial intelligence acquiring a vast amount of personal data, voice recognition, and financial data will also arise. Implantable brain devices, intended for communication, raise concerns for actually observing and manipulating thoughts. Some of the most feared risks due to nanotechnology in the society are the loss of privacy ( [Flagg, 2005](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#flagg)). Nano sensors developed for the battlefield could be used for eavesdropping and tracking of citizens by state agencies. This could lead to improvised warfare or terrorism. Bennet-Woods ( [2008](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#bennet)) argues that there should be an outright ban on nanoenabled tracking and surveillance devices for any purpose.

Nanotechnology in combination with biotechnology and medicine raise concerns regarding human safety. This includes nanoscale drugs that may allow for improvements in terrorism alongside more efficient soldiers for combat. Bioterrorism could greatly be improved through nano-engineered drugs and chemicals ( [Milleson, 2013](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#milleson)). Body implants could be used by soldiers to provide for better fighting efficiency but in the society, the extent in which the availability of body manipulation will have to be debated at large ( [Altmann J. , Nanotechnology and preventive arms control, 2005](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#altmann1)). Brain implanted stimulates could become addictive and lead to health defects. The availability of body and brain implants could have negative effects during peace time. Milleson ( [2013](https://scholar.lib.vt.edu/ejournals/JOTS/v41/v41n1/tate.html#milleson)) argues that there is fear that this technology could destabilize the human race, society, and family. Thus, the use in society should be delayed for at least a decade.

#### Cap solves poverty--Collapse is not inevitable and political reform is in the right direction – the alt cedes influence of left.

Teixeira and Judis 17—senior fellow at both The Century Foundation and American Progress AND editor-at-large at Talking Points Memo, former senior writer at The National Journal and a former senior editor at The New Republic (Ruy and John, “Why The Left Will (Eventually) Triumph: An Interview With Ruy Teixeira,” <http://talkingpointsmemo.com/cafe/why-left-will-eventually-win-ruy-teixeira>, dml) Recut Jet

But if you look at other parts of the left, they are actually doing relatively well. If you look at the Netherlands election, the green left did very well, and if you add up the votes of the Socialist Party (a left-socialist party), the greens, Democrats 66 (a left social-liberal party) and the social democrats, the left **hasn’t been totally decimated**. What has really been decimated is the Party of Labor, as the social democrats in the Netherlands are called. We are seeing the same thing in France where the Socialist Party (the French social democrats) candidate did terribly, but [independent socialist Jean-Luc] Melenchon did quite well. The left **still has strength**, but it is **divided up among different political tendencies**. It is going to have to **reorganize itself around an economic program** that is going to deliver what people want, which is **better growth** and **better distribution**. Until that happens, the left will be **in a quagmire**. Judis: I want to look more closely at your argument that the left does better in good times and the right in bad times. Bill Clinton got elected in the wake of a recession in 1992, Barack Obama might not have won the presidency in 2008 if the financial crash hadn’t happened that September. The Populists came out of the farm crisis in 1880s and early 1890s; the New Deal out of the Great Depression. I am not saying that bad times is better for the left, but only that there isn’t a necessary connection in either case and that you are making too facile an assumption about which times promote which politics. Teixeira: Bad times do propel people into motion and produce protest and reaction, but looked at from when you can accomplish the goals of the left of **making society better** and **implementing important reforms**, I think it is **typically easier** when the economy is **expanding fairly rapidly** and **living standards are going up** than when the reverse is true. It is **not a perfect relationship**, but **by and large** I think it’s true. So yeah, Obama can get elected in a situation where he was aided by an economic downturn, but his ability to **put together a progressive coalition** that could **stick together for a long time** and continue to implement reforms was **very much undermined by the economic situation**. Judis: Let’s turn it around and look at the connection between the right and good and bad times. In America, the 1920s were relatively good times, and the Republicans controlled the government the whole decade. Teixeira: The 1920s were not nearly as good a time people think it was. It was a time of relatively slow per capita income growth. It was very unequally distributed, the industrial working class did somewhat well, but the rural areas did poorly, and there were four recessions between 1918 and 1929. It was not such a great time. It was relatively poor compared to the Progressive Era. Judis: So the Republicans did well in the 1920s because they were really bad times? Teixeira: There was a sense of real uncertainty, real economic paranoia. Judis: I don’t think you could call the 1920s bad times. You could call it uneven times. “Bad times” is stretching it. In addition, you have the real bad times of the Depression staring you in your face which is the time of the greatest advance in terms of a left and social democracy in our history. Teixeira: Desperate times make for desperate measure sometimes. There is **no guarantee they will help the left rather than the right**. I think that’s what we saw in the U.S. Obviously it didn’t work out so well in Europe. When I make the general analysis that the left is better off in a period of economic expansion and rising living standards, it doesn’t correspond exactly to the political outcomes you’ll have in those different periods. I am saying that **in a general sense**, the left has the **easiest time making advances** and **improving society** when things are going well **rather than when are going poorly**. Judis: Let’s look at Europe. In some of the countries in Northern Europe that are doing well, the center-right parties are in charge. Teixeira: Yes, but I think you can make the case the center-right parties aren’t exactly in charge in Europe. They also have their problems. The rise of populism in Europe is blowing apart the party system. Judis: You have got Holland, Denmark, Germany, and Austria. Those are all countries that are doing pretty well compared to the rest of the EU and that have center-right governments. Teixeira: The Netherlands is not doing that well. It’s all relative. Their recovery has been somewhat better. Their employment level has been high compared to other European countries, but there are a number of cuts in social services, wages haven’t been going up much, there is a lot more insecurity. Judis: Isn’t Germany doing well? Teixeira:. Germany is doing relatively well, but it hasn’t been a period of expansive growth for them either. There is a lot of wage stagnation and compression there. I **never meant to imply** that you can **perfectly predict social reform from economic outcomes**. But I think it **provides an important lens** on when the left does well and when the left does poorly. By and large when you look at Europe, you see the ~~straitjacket~~ [**dilemma**] that the Eurozone has created in the economies. People are **fearful**, they are **pessimistic**, they are **passive**. This is **very bad for the left**. Until you **break out** of that [dilemma] ~~straitjacket~~, the left is **not going to be able to do that well**, and the right is **going to continue to do relatively well** compared to them, and you’ll see the **continued rise in populism** because people have no faith in the system. So what I am trying to do is to get the left to focus on **getting to a new stage of capitalist growth** and **being able actually to deliver rising incomes**. There is No Alternative to the Left Judis: So let’s talk about how this political change will come about. What I took from your book is that we are currently suffering from secular stagnation, and that to get to a new stage of growth, we will have to implement the kind of left program that you describe. I worry that this argument contains a contradiction. On the one hand, the left can’t get its program enacted as long as times are bad. On the other hand, the only way to get out of bad times is for the left to get its program enacted. Teixeira: I see what you are asking. I think it is going to be **two steps forward**, **one step back**. We are sort of **slouching** toward the next stage of capitalism. I **don’t think it’s going to be pretty**. Political and economic factors are going to propel us in that direction. Ultimately, people want things to work better, they want their problems to be solved. And the **only way** we are going to get there is along the road I have described. I think this **equitable growth** approach that the Democrats united around is the future. The level of growth is going to vary over time, but I think the Democrats are the ones who are going to put us there and I think they are going to be rewarded for it. Judis:. But how does that happen? Isn’t there a crisis scenario implicit in your account? At some time, the current Third Way or neoliberal approach results in another Great Recession and at that point people will buy into a left-wing approach, the left-wing approach will create prosperity and at that time we will have an enduring left-wing or Democratic majority. Isn’t a step like this missing from your argument? Teixeira:. That certainly could be the way it goes down, but it’s **not clear we are required to have a recession** on the level we did in 2007 and 2008, or whether this sort of rolling crisis we have combined with other political events might do it. I don’t know, it’s hard to predict, but I think the great economist Herbert Stein said, if something cannot go on forever, it will stop. Judis: The great socialist Rosa Luxembourg said the choice was socialism or barbarism. I am not saying we are heading toward barbarism, but I think there is a determinism in your argument. I think you are saying that people will eventually choose a politics that will best help them. Reason will prevail. And I am not sure if that holds up historically. When you talk about the EU, you say eventually they will consolidate into a fiscal monetary union. I am not sure that is going to happen. It’s also possible that the Eurozone could break up and that there could be a lot of chaos. We have periods in history where things don’t happen in the best of all possible ways. Teixeira: The trajectory is **ultimately going to take us** to a **different** and **better place**. I think **eventually we will adapt** and we will **get something better** than we have because it is the **only solution to the ongoing problems**. **There is no alternative**. Judis: Countries are sometime structurally unable to do what is in their best interest. In the U.S., we have this strong anti-statist tradition going back to the revolution that seems to get in the way every time we want to do something like what you are proposing. It is possible that contrary to Hegel, the rational won’t turn out to be the real. Teixeira: Of course it is possible, but if you look at the history of the United States, **despite the anti-statist bias** and **despite all the other political problems**, the way the country has evolved over time is toward a **larger government** that **does more** and **provides more for people**. And we **obviously have evolved tremendously** in the social realm as well. Governments don’t do what is rational in the short term, at least rational in the sense you are describing it, but political systems **evolve over time** in a way that is consistent with the values and priorities of the left, and I expect that to continue over time. The 2016 Election Judis: Let’s talk about the 2016 election. Why did Clinton lose to such a weak opponent? Teixeira: The Democrats have an evolving majority that consists of groups like minorities, professionals, young people, single women and what have you, and that’s a true fact. It’s growing over time and it will continue to grow, but it was always mathematically true that if you take the declining group, the white non-college voters, and they move sufficiently in the direction of the other party, that will be enough to undermine your coalition. You won’t win. That’s exactly what happened in 2016. These voters moved rapidly away from the Democrats both in local and state races and in the presidential election. Judis: Why did they move? Teixeira: They do not have any faith that the Democrats share their values and are going to deliver a better life for them and their kids, and I think Hillary Clinton was a very efficient bearer of that meme. Whether she wanted to or not, the message she sent to these voters is that you are really not that important and I don’t take your problems seriously, and frankly I don’t have much to offer you. And that’s despite the fact that her economic program and policies would have actually been very good for these people. There was a study of campaign advertising in 2016 that showed Hillary outspent Trump significantly and that almost none of her advertising was about what she would actually do. Almost all of it was about how he was a bad dude. Voters were **fed up with stagnation** and with the Democrats and they **turned to someone who thought could blow up the system**. The way the Democrats and the left could **mitigate that problem** is to show these voters that they **take their problems seriously** and have their interests in mind, and could improve their lives. I **don’t think there is any way of doing that** without a **new model of economic growth**.

#### Causes mass death---only capitalism enables a peaceful solution to poverty.

Rainer Zitelmann 21. German historian and author of “The Rich in Public Opinion.” "Violence Is History’s Great Economic Leveler." National Interest. 6-30-2021. https://nationalinterest.org/feature/violence-history%E2%80%99s-great-economic-leveler-188974

Another question that is all too rarely asked is: What would be the price of eliminating inequality? In 2017, the renowned Stanford historian and scholar of ancient history Walter Scheidel presented an impressive historical analysis of this question: The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century. He concludes that societies that have been spared mass violence and catastrophes have never experienced substantial reductions in inequality.

Substantial reductions in inequality have only ever been achieved as the result of violent shocks, primarily consisting of war, revolution, state failure and systems collapse, and plague.

According to Scheidel, the greatest levelers of the twentieth century did not include peaceful social reforms, they were the two world wars and the communist revolutions. More than 100 million people died in each of the two world wars and in the communist social experiments.

Total War as a Great Leveler

World War II serves as Scheidel’s strongest example of “total war” leveling. Take Japan: In 1938, the wealthiest 1 percent of the population received 19.9 percent of all reported income before taxes and transfers. Within the next seven years, their share dropped by two-thirds, all the way down to 6.4 percent. More than half of this loss was incurred by the richest tenth of that top bracket: their income share collapsed from 9.2 percent to 1.9 percent in the same period, a decline by almost four-fifths. The declared real value of the income of the largest 1 percent of estates in Japan’s population fell by 90 percent between 1936 and 1945 and by almost 97 percent between 1936 to 1949. The top 0.1 percent of all estates lost even more during this period, 93 and 98 percent, respectively. During this period, the Japanese economic system was transformed as state intervention gradually created a planned economy that preserved only a facade of free-market capitalism. Executive bonuses were capped, rental income was fixed by the authorities, and between 1935 and 1943 the top income tax rate in Japan doubled.

Significant leveling also took place in other countries during wartime. According to Scheidel’s analysis, the two world wars were among the greatest levelers in history. The average percentage drop of top income shares in countries that actively fought in World War II as frontline states was 31 percent of the prewar level. This is a robust finding because the sample consists of a dozen countries. The only two countries in which inequality increased during this period were also those farthest from the major theaters of war (Argentina and South Africa).

Low savings rates and depressed asset prices, physical destruction and the loss of foreign assets, inflation and progressive taxation, rent and price controls, and nationalization all contributed in varying degrees to equalization. The wealth of the rich was dramatically reduced in the two world wars, whether countries lost or won, suffered occupation during or after the war, were democracies or run by autocratic regimes.

The economic consequences of the two world wars were, therefore, devastating for the rich—a fact that stands in direct opposition to the thesis that it was capitalists that instigated the wars in pursuit of their own economic interests. Contrary to the popular perception that the lower classes suffered most in the wars, in economic terms it was the capitalists who were the biggest losers.

Incidentally, the left-wing economist Thomas Piketty comes to a similar conclusion. In his book Capital in the Twenty-First Century, he argues that progressive taxation in the twentieth century was primarily a product of the two world wars and not of democracy.

Poverty is Eliminated Peacefully

The price of reducing inequality has thus usually involved violent shocks and catastrophes, whose victims have been not only the rich but millions and millions of people. Neither nonviolent land reforms nor economic crises nor democratization has had as great a leveling effect throughout recorded history as these violent upheavals. If the goal is to distribute income and wealth more equally, says historian Scheidel, then we simply cannot close our eyes to the violent ruptures that have so often proved necessary to achieve that goal. We must ask ourselves whether humanity has ever succeeded in equalizing the distribution of wealth without considerable violence. Analyzing thousands of years of human history, Scheidel’s answer is no. This may be a depressing finding for many adherents of egalitarian ideas.

However, if we shift perspective, and ask not “How do we reduce inequality?” but “How do we reduce poverty?” then we can provide an optimistic answer: Not violent ruptures of the kind that led to reductions of inequality, but very peaceful mechanisms, namely innovations and growth, brought about by the forces of capitalism, have led to the greatest declines in poverty. Or, to put it another way: The greatest “levelers” in history have been violent events such as wars, revolutions, state and systems collapses, and pandemics, but the greatest poverty reducer in history has been capitalism. Before capitalism came into being, most of the world’s population was living in extreme poverty—in 1820, the rate stood at 90 percent. Today, it’s down to less than 10 percent. And the most remarkable aspect of all this progress is that, in the recent decades since the end of communism in China and other countries, the decline in poverty has accelerated to a pace unmatched in any previous period of human history. In 1981, the rate was still 42.7 percent; by 2000, it had fallen to 27.8 percent, and in 2021 it was only 9.3 percent.

#### Exploitation is inevitable without markets, but at worst it’s only a short run effect of global capitalism. There’s a built-in incentive for equality in markets

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Even if pre-modern human history was essentially defined by poverty, social domination, and violent conflict, it is still common to blame the prevalence of such ills on modernity. Yet, as many have rightly pointed out, what is difficult to explain is not underdevelopment but that development was at all possible. According to a progressive reading of history, the key driver behind the great acceleration of the last centuries has been the emergence of broad social investments (Lindert, 2004). While both Marxists and libertarians may think otherwise, equality is crucial for modern capitalism to function as it provides both consumers who can afford the goods of industrialism and producers who can create ever more sophisticated things of value to others. Whatever short-term gains that may be obtained through exploitation or other unequal forms of exchange, they are dwarfed by the long-term gains that come with greater measures of equality as clearly illustrated by the resounding economic success of welfare capitalism over the course of the twentieth century (Berman, 2006). The same of course holds true in a globalised economy. Rich countries may benefit in the short run from low consumer prices of imported goods but, for every Bangladesh that becomes a South Korea, the value of rising global demand and new export markets is obviously much greater.