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#### The value criterion is maximizing expected well being.

#### Phenomenal experiences prove that pain is intrinsically bad – one cannot understand what pain without associating it with objective disvalue.

Mendola 06 [Joseph Mendola, (Joseph Mendola is professor and chair in the Department of Philosophy at the University of Nebraska–Lincoln. He is the author of Human Thought and of articles on ethics, metaphysics, and philosophy of mind.) "Goodness and Justice: A Consequentialist Moral Theory" Cambridge University Press, 2006, https://www.cambridge.org/core/books/goodness-and-justice/AE25780DC33533E8797FB684C5FBD36E, DOA:6-7-2019 // WWBW]

While this view is of course controversial in our historical situation, in which many hold that sensory experience is as of yellow though there is nothing in the world that is so, not even a sense datum, or at the very least that the yellow we experience is a natural property constituted by physical properties like a certain range of surface spectral reflectance, still the view in question is, as I’ve said, one live competitor. Indeed, it is often motivated by arguments that are structurally similar to the open-question argument: You look at a gold bar and have a certain sort of phenomenal experience. But it seems to some that it might well be an open question whether your physical twin in a physically identical environment has the same phenomenal experience, or any at all. He might be a zombie or a qualia invert. And the openness of that question suggests to some that **the physical cannot constitute** your **phenomenal experience.** At least such qualia dualism is relatively concrete and robust. Even though it involves physically unconstituted qualia, it involves nothing that is non-natural in Moore’s sense. It is at least concretely comprehensible. And that gives it a great advantage over alternative forms of normative realism. That is my main point, that this so far familiar qualia dualism unexpectedly but very plausibly implies a form of normative realism. **Painfulness** – or, more accurately, the phenomenal property present in certain sorts of extreme and paradigmatic physical pain – **is** a kind of **disvalue**. That is my new idea.34 The phenomenal difference between those in bliss and those in agony includes a difference in a sort of felt phenomenal value. **The phenomenal difference between pain and pleasure seems** (at least in part and sometimes) **to be that the phenomenal component of the former is nastier, intrinsically worse than that of the second. The red knight was stabbed to death.** Just as no one can adequately describe what it was like to be him without capturing his sensation of his red and flowing blood and hence the property of phenomenal redness, so no one can describe what it was like to be him without capturing the nasty sensations he felt and hence the property of phenomenal nastiness or disvalue. And **no one can understand what his phenomenal state was without knowing that it was intrinsically bad, worse than pleasure. No one, not even a Martian, can give a complete and adequate characterization of the red knight’s murder while ignoring the phenomenal state that was a part of that situation. And no one, not even a Martian, can give a complete and adequate characterization of that phenomenal state without capturing its nastiness, its intrinsic disvalue.** The red knight’s murder possessed what we might call objective intrinsic disvalue. If someone feels bad, then there is something bad, at least in cases of extreme physical pain. My further claim, to which constitutive naturalists dissent, is that this involves unconstituted but natural disvalue. **Like other phenomenal properties, the disvalue present in agony is unconstituted by physical properties, though it is itself concrete and natural. It is just like phenomenal yellow.** The objective but unconstituted phenomenal component of agony involves a correspondingly objective and unconstituted phenomenal property that is usually present in cases of at least extreme physical pain, a painfulness or “unpleasant hedonic tone”, as it was once called.35 And **such objective phenomenal properties are, at least in part, a sort of intrinsic disvalue or badness.** Something analogous is true of certain paradigmatic physical pleasures. They involve objective intrinsic value.

#### Actor-Specificity—util’s the only theory that assigns culpability to policymakers and allows us to assess policies.

Hirschel-Burns 16—PhD Student in Political Science @ Yale (Danny, In Defense of Consequentialism: A Response to Shadi Hamid," Apr 19, 2016, <https://thewideninglens.wordpress.com/2016/04/19/in-defense-of-consequentialism-a-response-to-shadi-hamid/>)

My difference of opinion is fundamental: I believe most US foreign policy to be short-sighted, and consequentialism, or the weighing of long-term ramifications against the initial intended effect of a particularly intervention to represent the ideal method of policymaking. Policies cannot solely be judged on intention, due to the frequency with which good intentions produce negative outcomes, nor can they be judged solely on initial effects due to the long-running causal chains produced by order-altering things like military interventions. However, Hamid is right that it is impossible to foresee some ramifications (even if we can see general correlations) of foreign policy, but he doesn’t apply that standard of doubt consistently across his analysis. Early in the essay, Hamid makes the point that to evaluate the Libyan intervention, it is necessary to compare the current situation with the counterfactual: what would Libya look like if the US hadn’t intervened. In general, the assertion is correct, but the practice of counterfactuals is tricky. Hamid’s analysis of where the Libyan conflict was at when the US intervened is enlightening, but his conclusion that Libya would likely look like Syria today had the US not intervened is highly questionable. Political prediction, especially on rare events like mass atrocities or civil wars, is really, really hard. And when you consider all the differences between Libya and Syria (total population, population density, salience of sectarian divides, regime configuration, military capability of opposition, etc.) along with all contingencies that could have occurred in the past four years, it is impossible to say with any certainty that Libya would bear a resemblance to Syria. Syria is merely a convenient standard of comparison because it’s an ongoing civil war in the Middle East, but saying Libya would be Syria doesn’t actually tell us that much about Libya or the effects of intervention. It’s not that the intervention can’t be justified with counterfactuals, but they need to be more carefully constructed. The central thrust of Hamid’s essay is to deride what he calls consequentialism, or evaluating the efficacy of foreign policy based on events years after the initial intervention in the target location. For Hamid, such an approach is particularly problematic because it a policy cannot be retroactively deemed a mistake if the limited goal of the intervention is achieved initially. Therefore consequentialism creates an impossibly high bar for foreign policy decisions: unless a foreign policy results in a peaceful, liberal democracy, than it’s a failure. This is, however, a major straw man. Certainly there are some critics that would deem the Libyan intervention a failure based on this standard, but Hamid lumps in those with reasonable concerns that a civil war (likely to continue for many years based on what we know about civil wars and foreign intervention) at least partially produced by the NATO intervention will have more negative long-term effects on Libyans than Gaddafi’s intended repression. Worrying about consequences does not preclude making foreign policy decisions. Recognizing that every decision has potential positive and negative effects is no more than an accurate framework for analyzing policy. There are an additional two problems with Hamid’s argument here. First, the dismissal of consequentialism is one of the central dynamics that leads Western policymakers to struggle with conflict prevention. Short-term thinking produces short-term solutions. Policymakers become trapped in a vicious circle of continual crises that overwhelm them and prevent longer-term thinking that could go a long way in preventing violence. Second, Hamid’s insistence that the initial moral righteousness of an intervention negates any negative effects, is deeply problematic. As many before me have argued, focusing only on moral imperatives disincentives careful planning and allows policymakers to wash their hands of responsibility if the situation starts to go south. Evaluating military interventions isn’t personal morality, because very rarely can doing the right thing in your personal life lead to deaths of thousands of people. Afghanistan is a valid example. The United States was going after the Taliban in response to 9/11 initially, but the war has had disastrous long-term effects for the country. It would take quite a bit of chutzpah to declare it a success. Moral arguments without strategic and humanitarian (writ large) considerations are also prone to abuse, because liberal interventionists and neoconservatives aren’t actually that far apart: both believe in the wisdom of Western democracies to improve the world through military force. Without more consequentialist standards, there’s not a clear line the prevents Iraq-like decisions. So Hamid’s own argument that Obama being right about Iraq decreases his likelihood he’ll be right about other situations is undermined by a lack of a standard that allows leaders to tell the difference between the two.

#### Extinction outweighs

Pummer 15 [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. “Moral Agreement on Saving the World” Practical Ethics, University of Oxford. May 18, 2015] AT

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter. Even John Rawls wrote, “All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.” Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They’d thus imply very strong reasons to reduce existential risk, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)

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Nanotech DA

#### Patent thickets are preventing private sector nanotech acquisition

Pearce 12 [Joshua Pearce, Departments of Materials Science & Engineering and of Electrical & Computer Engineering, Joshua M. Pearce is associate professor in the Open Sustainability Technology Lab, Michigan Technological University. “Make nanotechnology research open-source.” November 21, 2012. *Nature.* https://www.nature.com/articles/491519a]

This thicket of patents, including entire classes of nanotechnologies, basic methods and science, is hindering nanotechnology. Excessive patenting is increasing costs, slowing technical development and removing from the public domain fundamental knowledge about the understanding and control of matter on the atomic or molecular scale (1–100 nanometres). Patent thickets occur in other high-tech fields, but the consequences for nanotechnology are dire because of the potential power and immaturity of the field. Advances are being stifled at birth because downstream innovation almost always infringes some early broad patents. By contrast, computing, lasers and software grew up without overzealous patenting at the outset2. Nanotechnology offers the promise of enabling matter to be manipulated as easily as software. I believe that those working with it should adopt the open-source approach3 that has proved so successful for software development. All publicly funded nanotechnology research and innovation should be made available to everyone for free. A moratorium should be placed on patenting fundamental nanotechnologies and basic quantum-science applications, from which most developments stem. Intellectual-property shackles Nanotechnology is big business. According to a 2011 report by technology consultants Cientifica, governments around the world have invested more than US$65 billion in nanotechnology in the past 11 years. The sector contributed more than $250 billion to the global economy in 2009 and is expected to reach $2.4 trillion a year by 2015, according to business analysts Lux Research. Since 2001, the United States has invested $18 billion in the National Nanotechnology Initiative; the 2013 US federal budget will add $1.8 billion more. This investment is spurring intense patent filing by industry and academia. The number of nanotechnology patent applications to the US Patent and Trademark Office (USPTO) is rising each year and is projected to exceed 4,000 in 2012. Anyone who discovers a new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof, may obtain a patent that prevents others from using that development unless they have the patent owner's permission. With universities increasingly operating like corporations, faculty members are pressured into locking away their results as intellectual property (IP), even though their research is largely funded by taxpayers. In the United States, the passage of the 1980 Bayh–Dole Act enabled US universities to retain ownership of the products of federally funded research that had previously been non-exclusively licensed to anyone on request4. Broad patents covering the 'building blocks' of nanotechnology — such as quantum dots, nanowires and fullerenes, carbon nanotubes and methods for making them — hamper conscientious innovators, who must spend time and money to acquire all the necessary licences to avoid lawsuits5. Examples of patents that cover basic components include one owned by the multinational chip manufacturer Intel, which covers a method for making almost any nanostructure with a diameter less than 50 nm; another, held by nanotechnology company NanoSys of Palo Alto, California, covers composites consisting of a matrix and any form of nanostructure. And Rice University in Houston, Texas, has a patent covering “composition of matter comprising at least about 99% by weight of fullerene nanotubes”. The vast majority of publicly announced IP licence agreements are now exclusive, meaning that only a single person or entity may use the technology or any other technology dependent on it6. This cripples competition and technological development, because all other would-be innovators are shut out of the market. Exclusive licence agreements for building-block patents can restrict entire swathes of future innovation. An evaluation of the carbon-nanotube patent thicket in 2006 found that of 446 carbon-nanotube patents issued in the United States, in which 8,557 claims were made, 420 of those claims were of a building-block type7. Imagine how equivalent patenting of the idea of a semiconductor or basic programming would have stifled electronics and computing. These dense webs of overlapping rights are created partly as a result of the complex nature of the underlying science. Beating into this patent thicket is made difficult for innovators and patent examiners alike because of the field's interdisciplinary nature and its span across a range of industries. Nanoscience uses a rich and fast-evolving lexicon of technical language — carbon nanotubes can, for example, be described as nanofibres, fibrils, shells, nanocylinders, buckytubes or nanowires. For nanotechnology patent examiners at the USPTO, incomplete availability of information and inadequate training are recognized problems8. Licences can be costly, but the potential expense of litigation for not acquiring them is often much greater. Multimillion-dollar legal fees have overwhelmed nanotechnology companies such as Evident Technologies (legal fees of $1 million compared with $4 million in assets) and Luna Innovations (ordered by a jury to pay $36 million despite assets of $20 million). Such risks dissuade other companies from working in the nanotechnology field.

#### Nanomedicine is a core part of medicine --- it’s included in the AFF

Kim et. al. 10 [Betty Y.S. Kim, PhD, MD, James T. Rutka PhD, MD, and Warren C.W. Chan, PhD, MD, all from the Institute of Biomaterials and Biomedical Engineering (B.Y.S.K., W.C.W.C.), Terrence Donnelly Centre for Cellular and Biomolecular Research (B.Y.S.K., W.C.W.C.), the Department of Materials Science and Engineering (W.C.W.C.), and the Department of Chemical Engineering (W.C.W.C.), University of Toronto (B.Y.S.K., J.T.R., W.C.W.C.); and the Division of Neurosurgery (B.Y.S.K., J.T.R.) and the Arthur and Sonia Labatt Brain Tumour Research Centre (J.T.R.), Hospital for Sick Children (B.Y.S.K., J.T.R.). “Nanomedicine.” 2010. *New England Journal of Medicine.* https://www.researchgate.net/profile/Betty-Kim-3/publication/49683877\_Nanomedicine/links/56496aba08ae9f9c13ebd611/Nanomedicine.pdf]

Nanotechnology is defined as the “intentional design, characterization, production, and applications of materials, structures, devices, and systems by controlling their size and shape in the nanoscale range (1 to 100 nm).”1 Because nanomaterials are similar in scale to biologic molecules and systems yet can be engineered to have various functions, nanotechnology is potentially useful for medical applications. The field of nanomedicine aims to use the properties and physical characteristics of nanomaterials for the diagnosis and treatment of diseases at the molecular level. Nanomaterials are now being designed to aid the transport of diagnostic or therapeutic agents through biologic barriers; to gain access to molecules; to mediate molecular interactions; and to detect molecular changes in a sensitive, highthroughput manner. In contrast to atoms and macroscopic materials, nanomaterials have a high ratio of surface area to volume as well as tunable optical, electronic, magnetic, and biologic properties, and they can be engineered to have different sizes, shapes, chemical compositions, surface chemical characteristics, and hollow or solid structures.2,3 These properties are being incorporated into new generations of drug-delivery vehicles, contrast agents, and diagnostic devices, some of which are currently undergoing clinical investigation or have been approved by the Food and Drug Administration (FDA) for use in humans. Examples of the nanomaterials most commonly used in medicine are provided in Figure 1 and Table 1. This overview describes the properties of nanomaterials, their principal medical applications, and the future possibilities for this emerging field.

#### Nanotech is dual use --- greater access causes terrorism, rogue states, and arms racing

Winstead 20 [Nicholas Winstead is a graduate student in the School of International Service at American University. “The applications and implications of nanotechnology.” April 15, 2020. https://www.american.edu/sis/centers/security-technology/the-applications-and-implications-of-nanotechnology.cfm]

There are three distinct threats posed by nanotechnology. First, the diffusion of nanotech may increase the likelihood of nano-enabled bioterrorism. Nanotechnology is becoming increasingly cheap and user-friendly. “Do-It-Yourself” nanotechnology hardware and open-source instructions are readily available online. For example, one site provides instructions for building a DNA nanotechnology lab for under $500. Another site advertises nanotechnology experiments for the whole family, ages 4 and up. This “democratization” of nanotech creates more opportunities for bad actors to engineer weapons (from “the comfort of your own home!” as the site advertises). Second, nanotechnology will make it easier for state actors to develop or use advanced CB weapons. Nanotech will make these weapons cheaper to produce and easier to conceal and transport, which will facilitate their proliferation to rogue states. Furthermore, existing national and international laws designed to prevent the spread of dangerous chemicals may be unable to keep pace with the rapid changes brought on by nanotech. Third, the potential for new nano-enabled capabilities may accelerate arms races and undermine strategic stability between the U.S. and its authoritarian great power competitors. Militaries around the world are already fielding expensive - and secretive - research and development programs to harness the technology’s potential. This risks offense-defense spirals that could make war more likely - and bloodier if it occurs.

#### Extinction

Piers Millett 17, Consultant for the World Health Organization, PhD in International Relations and Affairs, University of Bradford, Andrew Snyder-Beattie, “Existential Risk and Cost-Effective Biosecurity”, Health Security, Vol 15(4), http://online.liebertpub.com/doi/pdfplus/10.1089/hs.2017.0028

Historically, disease events have been responsible for the greatest death tolls on humanity. The 1918 flu was responsible for more than 50 million deaths,1 while smallpox killed perhaps 10 times that many in the 20th century alone.2 The Black Death was responsible for killing over 25% of the European population,3 while other pandemics, such as the plague of Justinian, are thought to have killed 25 million in the 6th century—constituting over 10% of the world’s population at the time.4 It is an open question whether a future pandemic could result in outright human extinction or the irreversible collapse of civilization.

A skeptic would have many good reasons to think that existential risk from disease is unlikely. Such a disease would need to spread worldwide to remote populations, overcome rare genetic resistances, and evade detection, cures, and countermeasures. Even evolution itself may work in humanity’s favor: Virulence and transmission is often a trade-off, and so evolutionary pressures could push against maximally lethal wild-type pathogens.5,6

While these arguments point to a very small risk of human extinction, they do not rule the possibility out entirely. Although rare, there are recorded instances of species going extinct due to disease—primarily in amphibians, but also in 1 mammalian species of rat on Christmas Island.7,8 There are also historical examples of large human populations being almost entirely wiped out by disease, especially when multiple diseases were simultaneously introduced into a population without immunity. The most striking examples of total population collapse include native American tribes exposed to European diseases, such as the Massachusett (86% loss of population), Quiripi-Unquachog (95% loss of population), and theWestern Abenaki (which suffered a staggering 98% loss of population).

In the modern context, no single disease currently exists that combines the worst-case levels of transmissibility, lethality, resistance to countermeasures, and global reach. But many diseases are proof of principle that each worst-case attribute can be realized independently. For example, some diseases exhibit nearly a 100% case fatality ratio in the absence of treatment, such as rabies or septicemic plague. Other diseases have a track record of spreading to virtually every human community worldwide, such as the 1918 flu,10 and seroprevalence studies indicate that other pathogens, such as chickenpox and HSV-1, can successfully reach over 95% of a population.11,12 Under optimal virulence theory, natural evolution would be an unlikely source for pathogens with the highest possible levels of transmissibility, virulence, and global reach. But advances in biotechnology might allow the creation of diseases that combine such traits. Recent controversy has already emerged over a number of scientific experiments that resulted in viruses with enhanced transmissibility, lethality, and/or the ability to overcome therapeutics.13-17 Other experiments demonstrated that mousepox could be modified to have a 100% case fatality rate and render a vaccine ineffective.18 In addition to transmissibility and lethality, studies have shown that other disease traits, such as incubation time, environmental survival, and available vectors, could be modified as well.19-2

#### Instability, opaque tech development, and great power conflict escalate to nuke war

Aftergood 7-6 [Steven Aftergood directs the FAS Project on Government Secrecy. The Project works to reduce the scope of national security secrecy and to promote public access to government information. He writes Secrecy News, which reports on new developments in secrecy policy and provides direct access to significant official records that are otherwise unavailable or hard to find. “Pentagon Sees “Increased Potential” for Nuclear Conflict.” Jully 6, 2021. https://fas.org/blogs/secrecy/2021/07/increased-potential/]

The possibility that nuclear weapons could be used in regional or global conflicts is growing, said a newly disclosed Pentagon doctrinal publication on nuclear war fighting that was updated last year. “Despite concerted US efforts to reduce the role of nuclear weapons in international affairs and to negotiate reductions in the number of nuclear weapons, since 2010 no potential adversary has reduced either the role of nuclear weapons in its national security strategy or the number of nuclear weapons it fields. Rather, they have moved decidedly in the opposite direction,” the Department of Defense document said. “As a result, there is an increased potential for regional conflicts involving nuclear-armed adversaries in several parts of the world and the potential for adversary nuclear escalation in crisis or conflict.” The publication presents an overview of U.S. nuclear strategy, force structure, targeting and operations. See Joint Nuclear Operations, JP 3-72, April 2020. The document replaces a 2019 edition titled Nuclear Operations that was briefly disclosed and then withdrawn from a DoD website. (See “DoD Doctrine on Nuclear Operations Published, Taken Offline,” Secrecy News, June 19, 2019.) The current document no longer includes some of the more unfiltered and enthusiastic language about achieving “decisive results” through nuclear strikes and “prevail[ing] in conflict” that appeared in the 2019 version. The statement that “The President authorizes the use of nuclear weapons” was changed to a more restrained declaration that “Only the President can authorize the use of nuclear weapons.” Meanwhile, new material has been added, including an assessment that the threat from potential adversaries has grown even as the US nuclear posture is said to have been moderated: “While the United States has continued to reduce the number and salience of nuclear weapons, others, including Russia and China, have moved in the opposite direction. They have added new types of nuclear capabilities to their arsenal, increased the salience of nuclear forces in their strategies and plans, and engaged in increasingly aggressive behavior.” “Russia’s strategic nuclear modernization has increased, and will continue to increase, its warhead delivery capability, which provides Russia with the ability to rapidly expand its deployed warhead numbers.” “China continues to increase the number, capabilities, and protection of its nuclear forces.” “North Korea’s continued pursuit of nuclear weapons capabilities poses the most immediate and dire proliferation threat to international security and stability.” “Iran’s development of increasingly long-range ballistic missile capabilities, and its aggressive strategy and activities to destabilize neighboring governments, raises questions about its long-term commitment to forgoing nuclear weapons capability.”

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Regional Supply Centers CP

#### CP Text: Least developed countries should establish regional pharmaceutical centers.

Reichman 06 [Jerome H. Reichman is Bunyan S. Womble Professor of Law at Duke Law School. He has written and lectured widely on diverse aspects of intellectual property law, including comparative and international intellectual property law and the connections between intellectual property and international trade law. “Patents, the WTO, and Access to Essential Medicines.” Sept. 28, 2019. https://web.law.duke.edu/features/2006/reichmansykes/]

Other amendments gave the least developed countries an exemption from some of their TRIPS obligations until 2013, and a further exemption from patenting pharmaceuticals until 2016. Significantly, said Reichman, if a regional group of these countries associated themselves in a trade association, 50 percent of members of which are among these least developed countries — “the poorest of the poor” — they can re-export imported goods, including essential medicines, imported under double compulsory licenses throughout the entire region. “What I want to persuade you of is that my dream of establishing regional pharmaceutical supply centers in poor countries, which I launched four or five years ago before we had this enabling legislation, has now become legally feasible,” said Reichman. He proceeded to outline, by way of example, the formation of a loose trade agreement between 12 countries in sub-Saharan Africa, and their subsequent establishment of a regional pharmaceutical supply center in a member country exempt from patent protections until 2016. The center’s board of directors, composed of member countries’ health ministers, would decide which essential medicines were needed regionally; they would make the necessary compulsory licenses under Article 31 of the TRIPS agreement, and then endorse the licenses over to the central pharmaceutical supply center. “Behold, suddenly the directors find themselves in a very strong negotiating position vis-a-vis the pharmaceutical companies,” said Reichman. “The ministers, acting jointly, holding this bundle of compulsory licenses, can go to the original patent holder and offer the possibility of supplying the entire regional market, if it agrees to supply the drugs at truly affordable prices,” he said. “One of the things we have learned is that under the existing set of incentives, the manufacture of these drugs in developed countries is not being induced by markets in developing countries. So … if in these markets they get the marginal cost of production plus a genuine royalty of five or six percent, they are receiving rewards that go far beyond their original investment calculus.” Through this arrangement the patent holders would also be preserving their trademark and market share in the entire region against future competition, Reichman added. The ministers could offer “an even better deal” to the patent holder if the latter set up a regional factory, supervised production quality and supplied the member states from the regional facility, said Reichman. “The manufacturer then becomes a power in the region, we get exchange of know-how, we get spillovers, we get capacity building in these countries.” Such an arrangement would also help satisfy a little known provision in the TRIPS agreement which imposes hard obligations on developed countries to transfer technology to the least developed countries in order to give them a viable technological base, he said. And if the original patent holder declined such an offer, the directors could approach countries with experience producing generics, such as India, China, or Brazil, offering them a chance to develop a robust generic industry over 10 years which could subsequently convert to research.