### Framework

**I value morality.**

**The standard is minimizing material violence. [To clarify I defend utilitarianism].**

**[1] Personal identity reductionism is true – if the hemispheres of my brain were transplanted into 2 different people, neither would be me.**

**Parfit 84.** Derek Parfit 1984, “Reasons and Persons”, Oxford Paperbacks

It is in fact true that one hemisphere is enough. There are many people who have survived, when a stroke or injury puts out of action one of their hemispheres. With his remaining hemisphere, such a person may need to re-learn certain things, such as adult speech, or how to control both hands. But this is possible. In my example I am assuming that, as may be true of certain actual people, both of my hemispheres have the full range of abilities. I could thus survive with either hemisphere, without any need for re-learning.¶ I shall now combine these last two claims. I would survive if my brain was successfully transplanted into my twin's body. And I could survive with only half my brain, the other half having been destroyed. Given these two facts, it seems clear that I would survive if half my brain was successfully transplanted into my twin's body, and the other half was destroyed.¶ What if the other half was not destroyed? This is the case that Wiggins described: that in which a person, like an amoeba, divides.40 To simplify the case, I assume that I am one of three identical triplets. Consider¶ My Division. My body is fatally injured, as are the brains of my two brothers. My brain is divided, and each half is successfully transplanted into the body of one of my brothers. Each of the resulting people believes that he is me, seems to remember living my life, has my character, and is in every other way psychologically continuous with me. And he has a body that is very like mine.¶ This case is likely to remain impossible. Though it is claimed that, in certain people, the two hemispheres may have the same full range of abilities, this claim might be false. I am here assuming that this claim is true when applied to me. I am also assuming that it would be possible to connect a transplanted half-brain with the nerves in its new body. And I am assuming that we could divide, not just the upper hemispheres, but also the lower brain. My first two assumptions may be able to be made true if there is enough progress in neurophysiology. But it seems likely that it would never be possible to divide the lower brain, in a way that did not impair its functioning.¶ Does it matter if, for this reason, this imagined case of complete division will always remain impossible? Given the aims of my discussion, this does not matter. This impossibility is merely technical. The one feature of the case that might be held to be deeply impossible—the division of a person's consciousness into two separate streams—is the feature that has actually happened. It would have been important if this had been impossible, since this might have supported some claim about what we really are. It might have supported the claim that we are indivisible Cartesian Egos. It therefore matters that the division of a person's consciousness is in fact possible. There seems to be no similar connection between a particular view about what we really are and the impossibility of dividing and successfully transplanting the two halves of the lower brain. This impossibility thus provides no ground for refusing to consider the imagined case in which we suppose that this can be done. And considering this case may help us to decide both what we believe ourselves to be, and what in fact we are. As Einstein's example showed, it can be useful to consider impossible thought-experiments.¶ It may help to state, in advance, what I believe this case to show. It provides a further argument against the view that we are separately existing entities. But the main conclusion to be hdrawn is that personal identity is not what matters.¶ It is natural to believe that our identity is what matters. Reconsider the Branch-Line Case, where I have talked to my Replica on Mars, and am about to die. Suppose we believe that I and my Replica are different people. It is then natural to assume that my prospect is almost as bad as ordinary death. In a few days, there will be no one living who will be me. It is natural to assume that this is what matters. In discussing My Division, I shall start by making this assumption.¶ In this case, each half of my brain will be successfully transplanted into the very similar body of one of my two brothers. Both of the resulting people will be fully psychologically continuous with me, as I am now. What happens to me?¶ There are only four possibilities: (1) I do not survive; (2) I survive as one of the two people; (3) I survive as the other; (4) I survive as both.¶ The objection to (1) is this. I would survive if my brain was successfully transplanted. And people have in fact survived with half their brains destroyed. Given these facts, it seems clear that I would survive if half my brain was successfully transplanted, and the other half was destroyed. So how could I fail to survive if the other half was also successfully transplanted? How could a double success be a failure?¶ Consider the next two possibilities. Perhaps one success is the maximum score. Perhaps I shall be one of the two resulting people. The objection here is that, in this case, each half of my brain is exactly similar, and so, to start with, is each resulting person. Given these facts, how can I survive as only one of the two people? What can make me one of them rather than the other?¶ These three possibilities cannot be dismissed as incoherent. We can understand them. But, while we assume that identity is what matters, (1) is not plausible. My Division would not be as bad as death. Nor are (2) and (3) plausible. There remains the fourth possibility: that I survive as both of the resulting people.¶ This possibility might be described in several ways. I might first claim: ‘What we have called “the two resulting people” are not two people. They are one person. I do survive this operation. Its effect is to give me two bodies, and a divided mind.’¶ This claim cannot be dismissed outright. As I argued, we ought to admit as possible that a person could have a divided mind. If this is possible, each half of my divided mind might control its own body. But though this description of the case cannot be rejected as inconceivable, it involves a great distortion in our concept of a person. In my imagined Physics Exam I claimed that this case involved only one person. There were two features of the case that made this plausible. The divided mind was soon reunited, and there was only one body. If a mind was permanently divided, and its halves developed in different ways, it would become less plausible to claim that the case involves only one person. (Remember the actual patient who complained that, when he embraced his wife, his left hand pushed her away.)¶ The case of complete division, where there are also two bodies, seems to be a long way over the borderline. After I have had this operation, the two ‘products’ each have all of the features of a person. They could live at opposite ends of the Earth. Suppose that they have poor memories, and that their appearance changes in different ways. After many years, they might meet again, and fail even to recognise each other. We might have to claim of such a pair, innocently playing tennis: ‘What you see out there is a single person, playing tennis with himself. In each half of his mind he mistakenly believes that he is playing tennis with someone else.’ If we are not yet Reductionists, we believe that there is one true answer to the questionwhether these two tennis-players are a single person. Given what we mean by ‘person’, the answer must be No. It cannot be true that what I believe to be a stranger, standing there behind the net, is in fact another part of myself.

**That justifies util.**

**Gruzalski 86.** Bart Gruzalski 86 [UChicago], “Parfit's Impact on Utilitarianism”, Ethics, Vol. 96, No. 4, July 1986.

Parfit concludes his discussion of distributive moral principles by claiming that, “when we cease to believe that persons are separately existing entities, the Utilitarian view becomes more plausible. Is the gain in plausibility great, or small? My argument leaves this question open” (p. 342). In contrast, I have argued that the Reductionist View strongly supports the utilitarian account of desert and distributive justice. The argument has two aspects. One is the recognition of the utilitarian emphasis on secondary rules, including principles of distributive justice and policies of desert. These rules, principles, and policies are treated within the utilitarian account as if they have self-standing, whereas in fact they are justified on the principle of utility which alone has self-standing within the utilitarian program. The other aspect of the argument involves the recognition that the utilitarian’s dual treatment of secondary principles dovetails with the dual account of the nature of persons on the Reductionist View: persons exist, yet their existence just involves bodies and interrelated mental and physical events, and a complete description of our lives need not claim that persons exist. Furthermore, a body, brain, and interrelated series of mental and physical events are more fundamental and basic than the person whose existence just consists in them, much as the citizens and the territory are more fundamental and basic than the nation whose existence just consists in them. This corresponds precisely with the utilitarian account, for utilitarianism treats persons as fundamental and separate existents, while grounding this treatment on the impersonal elements of pain, suffering, happiness, and contentment. Because util-itarianism accurately reflects in this way the true nature of persons, it is much more plausible than has been previously recognized. In addition, since many of the current competitors to utilitarianism presuppose that the person is separate from the body, brain, and interrelated mental and physical events, it follows that these views err by being too personal and are therefore implausible. It follows that when we cease to believe that persons are separately existing entities, utilitarianism becomes significantly more plausible than any of its person-centered theoretical competitors.

**[2] Actor Spec— States must use util. Any other standard dooms the moral theory**

**Goodin 90.** Robert Goodin 90, [professor of philosophy at the Australian National University college of arts and social sciences], “The Utilitarian Response,” pgs 141-142 //RS

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more probable for them than private individuals. Before proceeding with the large argument, I must therefore say what it is that makes it so special about public officials and their situations that make it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first, the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices – public and private alike – are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. Public officials, in contrast, are relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices, but that is all. That is enough to allow public policy-makers to use the utilitarian calculus – assuming they want to use it at all – to choose general rules or conduct.

**[3] Pleasure and pain are the starting point for moral reasoning—they’re our most baseline desires and the only things that explain the intrinsic value of objects or actions**

**Moen 16**, Ole Martin (PhD, Research Fellow in Philosophy at University of Oslo). "An Argument for Hedonism." Journal of Value Inquiry 50.2 (2016): 267.

Let us start by observing, empirically, that **a widely shared judgment about intrinsic value** and disvalue **is that pleasure is intrinsically valuable and pain is intrinsically disvaluable**. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for **there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels**, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” **are** here **understood inclusively**, as encompassing anything hedonically positive and anything hedonically negative. 2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, **I might ask: “What for**?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. **The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good**. 3 As Aristotle observes: “**We never ask** [a man] **what** his **end is in being pleased, because we assume that pleasure is choice worthy in itself**.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that **if something is painful, we have a sufficient explanation of why it is bad**. If we are onto something in our everyday reasoning about values, it seems that **pleasure and pain are both places where we reach the end of the line in matters of value. Although pleasure and pain thus seem to be good candidates for intrinsic value and disvalue**, several objections have been raised against this suggestion: (1) that pleasure and pain have instrumental but not intrinsic value/disvalue; (2) that pleasure and pain gain their value/disvalue derivatively, in virtue of satisfying/frustrating our desires; (3) that there is a subset of pleasures that are not intrinsically valuable (so-called “evil pleasures”) and a subset of pains that are not intrinsically disvaluable (so-called “noble pains”), and (4) that pain asymbolia, masochism, and practices such as wiggling a loose tooth render it implausible that pain is intrinsically disvaluable. I shall argue that these objections fail. Though it is, of course, an open question whether other objections to P1 might be more successful, I shall assume that if (1)–(4) fail, we are justified in believing that P1 is true itself a paragon of freedom—there will always be some agents able to interfere substantially with one’s choices. The effective level of protection one enjoys, and hence one’s actual degree of freedom, will vary according to multiple factors: how powerful one is, how powerful individuals in one’s vicinity are, how frequent police patrols are, and so on. Now, we saw above that what makes a slave unfree on Pettit’s view is the fact that his master has the power to interfere arbitrarily with his choices; in other words, what makes the slave unfree is the power relation that obtains between his master and him. The difﬁculty is that, in light of the facts I just mentioned, there is no reason to think that this power relation will be unique. A similar relation could obtain between the master and someone other than the slave: absent perfect state control, the master may very well have enough power to interfere in the lives of countless individuals. Yet it would be wrong to infer that these individuals lack freedom in the way the slave does; if they lack anything, it seems to be security. A problematic power relation can also obtain between the slave and someone other than the master, since there may be citizens who are more powerful than the master and who can therefore interfere with the slave’s choices at their discretion. Once again, it would be wrong to infer that these individuals make the slave unfree in the same way that the master does. Something appears to be missing from Pettit’s view. If I live in a particularly nasty part of town, then it may turn out that, when all the relevant factors are taken into account, I am just as vulnerable to outside interference as are the slaves in the royal palace, yet it does not follow that our conditions are equivalent from the point of view of freedom. As a matter of fact, we may be equally vulnerable to outside interference, but as a matter of right, our standings could not be more different. I have legal recourse against anyone who interferes with my freedom; the recourse may not be very effective—presumably it is not, if my overall vulnerability to outside interference is comparable to that of a slave— but I still have full legal standing.68 By contrast, the slave lacks legal recourse against the interventions of one speciﬁc individual: his master. It is that fact, on a Kantian view—a fact about the legal relation in which a slave stands to his master—that sets slaves apart from freemen. The point may appear trivial, but it does get something right: whereas one cannot identify a power relation that obtains uniquely between a slave and his master, the legal relation between them is undeniably unique. A master’s right to interfere with respect to his slave does not extend to freemen, regardless of how vulnerable they might be as a matter of fact, and citizens other than the master do not have the right to order the slave around, regardless of how powerful they might be. This suggests that Kant is correct in thinking that the ideal of freedom is essentially linked to a person’s having full legal standing. More speciﬁcally, he is correct in holding that the importance of rights is not exhausted by their contribution to the level of protection that an individual enjoys, as it must be on an instrumental view like Pettit’s. Although it does matter that rights be enforced with reasonable effectiveness, the sheer fact that one has adequate legal rights is essential to one’s standing as a free citizen. In this respect, Kant stays faithful to the idea that freedom is primarily a matter of standing—a standing that the freeman has and that the slave lacks. Pettit himself frequently insists on the idea, but he fails to do it justice when he claims that freedom is simply a matter of being adequately (and reliably) shielded against the strength of others. As Kant recognizes, the standing of a free citizen is a more complex matter than that. One could perhaps worry that the idea of legal standing is something of a red herring here—that it must ultimately be reducible to a complex network of power relations and, hence, that the position I attribute to Kant differs only nominally from Pettit’s. That seems to me doubtful. Viewing legal standing as essential to freedom makes sense only if our conception of the former includes conceptions of what constitutes a fully adequate scheme of legal rights, appropriate legal recourse, justiﬁed punishment, and so on. Only if one believes that these notions all boil down to power relations will Kant’s position appear similar to Pettit’s. On any other view—and certainly that includes most views recently defended by philosophers—the notion of legal standing will outstrip the power relations that ground Pettit’s theory.

**[4] Util is a lexical pre-requisite to any other framework-threats to bodily security and life preclude the ability for moral actors to effectively utilize and act upon other moral theories since they are in a constant state of crisis that inhibit the ideal moral conditions which other theories presuppose – so, util comes first and my offense outweighs theirs under their own framework.**

**[5] No intent-foresight distinction — if we foresee a consequence, then it becomes part of our deliberation which makes it intrinsic to our action since we intend it to happen.**

**[6] Only consequentialism explains degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first.**

**[7] No act-omission distinction – We are responsible for intentional omissions because we actively choose not to act—we intend and act upon omissions.**

**[8] Extinction First –**

**[a] Forecloses future improvement – we can never improve society because our impact is irreversible**

**[b] Turns suffering – mass death causes suffering because people can’t get access to resources and basic necessities**

**[c] Moral uncertainty – if we’re unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it**

### 1AC – Adv – Innovation

#### Innovation’s declining – increasing complexity, mediocre research and patents, and balkanization from university patents

Gold 21, E Richard. [E. Richard Gold is a CIGI senior fellow and a James McGill Professor with McGill University’s Faculty of Law and was the founding director of the Centre for Intellectual Property Policy. “The fall of the innovation empire and its possible rise through open science.” Research policy vol. 50,5 (2021): 104226. doi:10.1016/j.respol.2021.104226]//anop

While Milton (1966, 15) assumed that research productivity per technical person increased at the same time as did costs – “[t]he augmentation by machines, for example, has increased the productivity of the average technical man-year to an unmeasured degree” – this turned out not to be the case. Rates of research and innovation productivity – investments, patents, papers and innovations per technical person as well as health, agricultural and other gains per paper and invention – declined even while investments increased. As Rescher (1978, 87) summarized, “the rapidly – indeed exponentially – increasing pace of effort-investment tends to mask the fact that the volume of high-quality returns per unit investment is apparently declining.” Earlier data regarding patent filings illustrated the problem of declining productivity. As early as 1936, Sanders (1936) concluded that, based on data between 1834 and 1934, while the number of patents per capita increased in the transition from an agricultural to an industrial economy, the rate of patenting seemed “to reach a constant level, or even show some drop” once industrialization took hold. Studies in the 1950s and 1960s refined Sanders's analysis by looking at patents against the number of technical workers rather than the entire population. Schmookler (1954) found that, despite an absolute increase in patent applications between 1870 and 1940, the number of patent applications per technical worker declined. Machlup (1962) found a similar decline between 1941 and 1958. Hausman et al. (1981) determined, based on patent and research and development data from 1968–1974, that firms suffered from a declining ability to translate their R&D investments into patents. Examining a variety of measures of productivity and innovation – GDP, education spending, as well as patents – Huebner (2005, 984) calculated that the US rate of innovation has been declining since 1916. Jones (2002, 220) noted that, despite the fraction of US STEM workers in the population increasing threefold (from 0.25 percent to 0.75 percent) between 1950 and 1993, “the growth rate of U.S. per capita GDP has been surprisingly stable.” Because infinitely increasing the number of STEM workers is unsustainable, he concluded, growth due to technology “must come to an end” (C. I. Jones 2002, 235). Total factor productivity (TFP) – the principal, if imperfect, measure of the pace of innovation and technical progress – peaked in 1940–1950 and has been steadily declining since, with a slight but short-lived increase between the mid 1990s and mid-2000s (Gordon 2016, 547; Griliches 1998; Field, 2006). Looking at similar data, Boniatu argued that “the U.S. economy seems to have reached its first threshold of mutation – and hence entered a phase of diminishing returns on innovation – in the thirties” (Bonaiuti, 2018, 1806). Bloom et al. (2020) conducted one of the most comprehensive studies documenting declining productivity since 1965. They compared economic outputs to investments made in research and development at both the macro and micro levels, and found the same phenomenon: research productivity was in systemic decline. At the macro scale, they measured economic output due to innovation in terms of TFP: “We find that research productivity for the aggregate U.S. economy has declined by a factor of 41 since the 1930s, an average decrease of more than 5% per year” (Bloom et al., 2020, 1105). At the micro level, whether measuring productivity in terms of yield rates for agricultural products, new drugs placed on the market, years of life saved from cancer or heart disease per publication or clinical trial, or chip density for computer chips, they uniformly found a drop. Lest one object that Bloom et al.’s findings only apply to older technologies, in which firms are plumbing the depths of a decreasing potential pool of innovations, Strumsky et al. (2010a, 503) examined new fields of technology, such as solar and wind technology, biotechnology and nanotechnology, where “simpler, basic discoveries can still routinely be made,” yet found a similar decline in productivity as in older fields. Based on their empirical analysis, they concluded that “in industrial economies there may no longer be increasing returns in newer sectors to offset diminishing returns in older ones” (Strumsky et al., 2010, 504). A recent study by Pammolli et al. (2020) suggests that the pharmaceutical industry has seen increased productivity since the early 2000s. This study used, however, a different measure of productivity than other studies in the field: attrition rates of drugs during clinical trials. While the authors found a drop in attrition rates, this may have been due to changes in the regulatory environment that relied increasingly on surrogate end-points5 of dubious value (Chen et al., 2020; Darrow et al., 2020) rather than on a real productivity gain. *It is thus difficult to know whether their finding of increased productivity in the pharmaceutical industry is real or is simply a result of regulatory changes*. 2.3. A divergence over patent data There is one notable exception in the empirical data on the productivity decline: from 1985 to 2013, the US went through a patent explosion. While patent applications per STEM worker were roughly stable between 1965 and 1985, domestic patent applications per STEM worker almost doubled (1.88)6 between 1985 and 2011. In a similar break with history, the number of domestic patent applications per research dollar more than doubled (2.13) between 1985 and 2013.7 This large upsurge in patenting led Gordon (2016, 567) to state that “[t]here is no debate about the frenetic pace of innovation activity, particularly in the spheres of digital technology, including robots and artificial intelligence.” There is, however, good reason to doubt this apparent frenetic pace of innovation between 1985 and 2013 (Gallini 2002). Kortum and Lerner (1999) argued that the patent upsurge was likely due to firms adopting better management or automation of the innovation process rather than increased innovation. Hall (2004) attributed the upsurge to strategic behavior by firms in complex product industries where products depend on multiple and broadly held patents. Rather than acquiring patents to protect key innovations, these players acquired large portfolios of patents “even those of dubious quality, that is, even those that they have no intention of enforcing” to attract venture capital to early-stage firms (Hall, 2004, 18). An empirical study by Danguy et al. (2014, 561) similarly concluded that strategy, rather than innovation, was driving global patent rate increases: “[T]he ‘global patent warming’ that is currently underway is essentially the result of the internationalization of patent applications and not a consequence of increased research productivity.” As the above summarizes, the patent explosion that began in the 1980s appears more due to a change in intellectual property management strategy than to effiency of the innovation system. Combined with the data on increasing costs and decreasing productivity, the evidence is strong that we are witnessing an innovation system that is growing less effective in creating wealth and social benefit. This decline has consequences, as I next examine: more risk adverse behavior that signals even greater future decline. 2.4. Increasing risk adverse research and innovation behavior Starting in the 1950s, both firms and academic researchers narrowed the scope of their research and innovation efforts, preferring safer rather than more novel innovations (Strumsky et al., 2011). This occurred at approximately the same time as research and innovation costs ratcheted up, leading to the hypothesis that firms faced with increasing costs decided to reduce their risk by taking on less innovative research. Akcigit et al. (2013b, 4) reasoned that more high risk “ideas are costly to pursue, so inventors focus on reuse/refinements.” On the industrial front, Youn et al. (2015, 6) found that “the proportion of technological combinations (that is, inventions) that are ‘narrow’ began to increase and currently stands at about 50%.” Clancy (2017b) similarly found that “US patents have made increasingly less novel connections among technological constituents since the 1950s.” Similarly, Krieger et al. (2018, 4) documented “a decline in innovativeness of small molecule drugs over time” through their examination of investigational drug databases. Fojo et al. (2014, E7) attribute this decline to a desire to reduce the riskiness of earnings. They concluded that while a breakthrough, if successful, would lead to higher long-term earnings, if this “strategy is so risky that investors lose confidence and sell their shares,” they would suffer a drop in stock price. This complements the finding by Arora et al. (2015, 2, 5) that “large firms are withdrawing from investing in science internally and focusing more on development,” “leaving universities and small firms to generate new ideas.” On the academic side, Edwards et al. (2011) demonstrate how firms and researchers continued to explore the same limited set of research targets while ignoring most targets. For example, they found that 65% of 2009 publications focused on the same 10% of proteins as had been copiously studied between 1950 and 2002. As a result, they concluded that “[m]uch of the work that has emerged from exploring the human genome over the past ten years lies fallow” (Edwards et al., 2011, 165), a significant inefficiency in the system. Similarly, Stoeger et al. (2018, 7) found that “while biomedical research does focus on important genes, a disproportionally high amount of research effort concentrates on already well-studied genes.” Using machine learning techniques, they determined that this conservative selection of research targets meant that “even highly promising genes that could already be studied by current technologies remain ignored” (Stoeger et al., 2018, 10). On the other hand, Pammolli et al. (2020) document an increase in the novelty of pharmaceutical innovation based on two factors: the indication for the drug and its mechanism of action (i.e. its biological target). One possible explanation for this result is that declining regulatory standards reduced innovator risk, adjusting their cost-benefit analysis to support their pursuit of higher-risk research. Alternatively, lower regulatory standards may have led to higher cost medicines with no superior efficacy or safety replacing older, less expensive, medicines (Saluja et al., 2018). This would result in more expensive and less effective medicines entering the market, doing little to increase the efficiency of the innovation system. Go to: 3. Explanations for the decline The question left open from these observations is why, contrary to Milton's beliefs, research productivity has been declining. The literature offers three explanations for this decline: 1) with time, science becomes more costly, requiring greater investments to produce the same level of result; 2) science and science funding is skewing toward mediocrity, including through a misalignment of incentives for researchers and for firms; and 3) increasing reliance on early-stage, university, patenting has led to a balkanization of efforts. I examine each in turn. 3.1. Complexity in science Rescher (2014) has long argued that science is both more expensive and less productive because the questions we pose are increasingly complex. He reasoned that scientists solved the easy problems early on. As science progressed, the difficulty of extracting knowledge – with an increased need for technology, energy and staff – grew. He concluded that “the increasing resource requirement for digging into ever deeper layers of complexity is such that successive triumphs in our cognitive struggles with nature are only to be gained at an increasingly greater price” (Rescher 2014, 64). Weitzman (1998, 333) agreed, suggesting “that the ultimate limits to growth may lie not so much in our abilities to generate new ideas, as in our abilities to process to fruition an ever-increasing abundance of potentially fruitful ideas.” B. F. Jones (2009) examined one aspect of this complexity: the ability to absorb and deploy an ever-richer set of scientific knowledge. As science progressed and required greater knowledge, he hypothesized that scientists would deploy a combination of three strategies: 1) individual researchers would need to absorb more knowledge, delaying when they began their careers; 2) researchers would become more specialized; leading to 3) the need for larger teams. Using U.S. inventor data from 1975 to 1999, he found: “an upward trend in team size that is both general and steep”; an average increase of age of first invention of 0.66 years per decade across all fields; and a 6% increase in specialization per decade. Similarly, Levitt and Levitt (2017) found that the age of scientists winning their first grants from the National Institutes of Health increased from about 36 to 44 years between 1980 and 2011. It is certainly true that some new technologies, such as CRISPR-Cas9 (Doudna and Charpentier, 2014), greatly simplify research and require less expensive technology. Nevertheless, as discussed in 2.2, Strumsky et al. (2010a, 503) found decreasing rates of productivity in new fields generally, including in biotechnology, solar, wind and nanotechnology. Thus, while there are cost-saving new technologies – with even significant savings – the overall trend toward higher costs appears to hold. Following Rescher and others, the problem seems to lie more in the way we organize science and innovation – the institutions, models of organization, use of intellectual property rights, etc. – than the complexity of the questions researchers investigate. 3.2. Mediocrity and misalignment Tainter proposed a second reason for decreasing productivity in the face of increasing costs: that research trends toward mediocre, middle of the road, and non-disruptive science and away from high-risk, breakthrough explorations. Tainter's argument, building on that of de Solla de Solla Price, 1986, 92), was that the average scientist today is of a lesser quality than that of yesterday due to the greater expansion in the number of researchers (Tainter, 1988). Indeed, between 1950 and 1993, C. I. Jones (2002, 220) found that the fraction of STEM researchers in the US tripled. While Tainter argues that this extra mass of researchers dilutes the effect of extraordinary scientists, there is no evidence to support this and seems to buy into a biased understanding of assessing quality (Kaatz et al., 2016; Wang et al., 2017). It further ignores the reality that the era of the lone scientist has given way to team science (B. Uzzi et al., 2013). Mediocrity comes in various guises, however. To render the concept more objective, and thus tractable, we can interpret mediocrity to mean a trend toward average, rather than exceptional, creativity. The literature on creativity and its component parts has grown over the decades (Amabile, 1983). In particular, Lee et al. (2015) identified two aspects of creativity that apply to scientific outputs: impact and novelty. A decline in research impact may help explain the cost and productivity problem. As Lee et al. (2015, 695) noted, impact is “realized through a social process interacting with the community and is therefore ultimately an ex post and subjective judgment” of the value of research. With this in mind, we can ask whether the incentives (and discentives) universities and firms establish to encourage teams to innovate lead to less productive outcomes. Specifically, do these incentives lead teams to expend ever more resources to obtain fewer innovations or innovations that offer ever lower productivity gains in health, the environment or the economy? Assessing real impact – the effect of a journal publication or innovation on changing real world outcomes – is difficult so both universities and firms measure something else: impact factor for universities and patent applications for firms. Neither captures impact fully, setting up perverse incentives. Universities and funding councils generally assess academic impact through citation analysis (McKiernan et al., 2019), not on the basis of the direct impact an artifact has on health or the economy. Because of the assumption that the more a paper is cited, the more important and, hence, novel it is, universities and funding councils only peripherally assess real impact. Wang et al. (2017, 1417) find, however, that the assumption that impact measures novelty is wrong. They conclude that more novel papers are actually less likely to be published in high Impact Factor journals – journals with a high average number of citations. They attribute this conclusion, in part, to the fact that novel papers take longer – more than 5 years – to achieve a high number of citations. As Journal Impact Factor is calculated on the basis of citations to articles published in that journal over only the previous two years (Garfield, 1999), the calculation ignores the higher long-term impact of novel articles. Given the two-year window for assessing impact, journals focus on publishing papers that generate short-term impact as they obtain no advantage from a paper with only a long-term impact. At the same time, academic researchers focus on publishing papers that generate short-term citations, even at the expense of novelty. Given how much weight peer review committees place on Journal Impact Factor, Wang et al. (2017, 1425) argue that there is a bias against novelty that applies “not only to funding decisions but to science policy more generally.” Because of this bias, “competitive selection procedures encourage relatively safe projects, which exploit existing knowledge, at the expense of novel projects that explore untested approaches” (Wang et al., 2017, 1416). Bhattacharya and Packalen (2020b, 17) concur, arguing that “[p]eer reviewers—a conservative lot if there ever was one—abet this tendency since grant applicants can credibly reassure them the proposed work is likely to produce visible, if marginal, successes.” Both Rzhetsky et al. (2015, 14,572) and Packalen and Bhattacharya (2018) give empirical support to this argument. Analysing millions of biomedical papers over a 30-year period, Rzhetsky et al. found that most researchers pursue conservative, low-risk, strategies, focusing on well-known molecules and “rarely wander far across the knowledge network or bridge disconnected chemicals.” This is exacerbated by the scarcity of funding opportunities that encourage risk-taking (Azoulay et al., 2011). Industry also leans towards lower impact research. In the pharmaceutical field, Fojo et al. (2014, E9) argue that “the rapidly rising cost of cancer therapies, the regulations governing their adoption by public and private insurers, and the increasing economic risk of drug development have had the unintended consequence of stifling progress by diverting enormous amounts of time, money, and other resources toward therapeutic indications that are arguably marginal.” More broadly, Strumsky et al. (2011) found that commercially-oriented researchers increasingly turn toward exploiting existing knowledge to generate small improvements rather than undertake riskier research that would expand product development in new directions. They speculate that researchers do so “[u]nder pressure to generate patents in copious amounts” (Strumsky et al., 2011, 8). This was particularly true during the patent explosion that started around 1985, discussed earlier at 2.3. Feldman (2018) documents that, between 2005 and 2015, pharmaceutical firms focused more on protecting past drugs through additional patents than on discovering new medicines. Due to strategic uses of patent law, “there is a complete undermining of the system for pharmaceutical innovation as the repeated addition of protections, one after another, pushes competition further into the future, threatening innovation in the process” (Feldman, 2018, 639). For both industry and universities, the incentives they provide to encourage impact actually decrease novelty and have little to do with real world impact. There is thus a deep misalignment between incentives and innovation, leading to lower novelty. 3.3. Balkanization through university intellectual property The economics literature is frustratingly in no better position today than it was in the 1950s to answer the question of whether patents increase or decrease overall innovation (William, 2017; Gallini, 2017; Sampat and Williams, 2018; Hall, 2019). Further, there is evidence that, while intellectual property and economic growth are correlated, the direction of causation may be from growth to higher levels of intellectual property protection, mediated by politics, rather than from intellectual property to growth (Morin and Gold, 2014; Gold et al., 2019). We do know that certain industries have constructed themselves around the availability of patents and hence incumbents remain dependent on them (Hall and Harhoff, 2012; Galasso and Schankerman, 2015). These industries include the chemical, pharmaceutical and biopharmaceutical industries. We also know that the availability of patents shapes the fields and nature of innovation, even if their effect on overall levels of innovation is uncertain (Moser, 2013). We have increasing evidence concerning the effect of university-held patents on innovation, although the literature is not yet conclusive. On the positive side, there are certainly technologies that emerged from universities through patenting into socially valuable innovations (Hockstad et al., 2017; Allard et al., 2018; Reinhart, 2020). Some of these relied on patents as a key instrument used to attain those benefits (Bremer et al., 2009). Further, Walsh et al. (2003) point out, using interview data, that broadly licensed university biotechnology research tools – such as PCR and recombinant DNA methods – impose relatively small extra costs and delays. On the negative side, university patents impose a number of transaction costs, whether through decreased freedom-to-operate (Gaessler et al., 2019) or through increased university patenting – documented by Bremer et al. (2009) – that entails not only the direct costs of obtaining a patent but accompanying litigation and negotiation costs. One must also be mindful that the benefits of university patenting are tempered by three factors. First, as Williams (2010) demonstrated, increased costs of accessing knowledge decreases the level of follow-on use of that knowledge. Second, the fact that universities used patents as a mechanism to transfer inventions to the private sector does not imply that the private sector could not have obtained the inventions through other mechanisms as efficienly. For example, a firm working in concert with a non-patenting university could develop and patent its own invention based on the collaboration. This is what occurred when Celgene acquired a patent over a drug directly building on previous unpatented research done in collaboration with the Structural Genomics Consortium (“The Ontario Institute for Cancer Research and the Structural Genomics Consortium Develop and Give Away New Drug-like Molecule to Help Crowd-Source Cancer Research” n.d.). Beyond this, universities have under-explored alternative intellectual property regimes – such as regulatory data protection – that provide fewer restrictions on use of the invention than do patents. Third we do not – and may never truly – know the quantity of university-originated innovations that would have come about but never materialized because of lack of freedom to operate, the threat of patent litigation from universities or their licensees (Gold and Carbone, 2010), restrictive licensing, or delays caused by negotiations over patents. Thus, one needs to temper assertions that the absence of university patents “would inevitably slow the development and reduce the availability of new treatments and vaccines” (Reinhart, 2020) with the reality that the empirical literature is mixed at best. Still, it is quite plausible that, in the absence of university patents, certain technologies would either be delayed or (less plausibly) never developed. On the other hand, the empirical literature also suggests that in the presence of those patents, other technologies are likely delayed or never developed. It is thus unsurprising that the literature suggests that the move to university-owned and controlled patents, accelerated, in part, through the 1980 Bayh-Dole Act (Mowery et al., 2001), did not demonstrably achieve either of the two overarching goals of the practice: to increase the level of innovation in the economy and to increase revenue gains for universities (Eisenberg and Cook-Deegan, 2018; Ouellette and Tutt, 2020; Corredoira et al., 2019). There are several reasons put forward to explain why a university patenting strategy has not had the desired results, including decreased downstream development and upstream duplication (Egelie et al., 2019), increased difficulty and delays in establishing contractual relationships with university technology transfer offices (Dahlborg et al., 2017; Hertzfeld et al., 2006; Kira R. Fabrizio, 2006), lack of university expertise and market knowledge (Swamidass and Vulasa, 2009), delayed dissemination and uptake of results (Williams, 2013; Fabrizio, 2009; Kira, 2006; West, 2006), perverse university incentive structures (Ouellette and Tutt, 2020; Eisenberg and Cook-Deegan, 2018) and the use of university patents to sue firms that have developed products without the aid of university patents (Eisenberg and Cook-Deegan, 2018, 82; Rooksby, 2011). Other forms of intellectual property rights, notably trade secrets (Williams, 2013; Gallini, 2017; Sampat and Williams, 2018) and university contractual relations (Walsh et al., 2005) also reduce the subsequent use of knowledge. Secrecy leads to data silos that hamper further research, especially when combined with privacy and informed consent rules (Rai, 2017). Negotiations over intellectual property rights with universities create complexity and thus either delay or result in the failure to reach a deal (Hertzfeld et al., 2006; Kira R. Fabrizio, 2006). In summary, the argument in favor of Bayh-Dole is mixed at best. There exist reasons to believe that not only do university-held patents, but other forms of intellectual property such as trade secrets, increase the costs of both current research efforts – through delay in establishing research collaborations – and future research. *Whatever benefits that may arise from university patenting are likely outweighted by the balkanization of knowledge that they create*. 3.4. Summary While none of the three explanations explored above – increased complexity, misaligned incentives, and knowledge silos protected by intellectual property – may alone explain the increasing inefficiency of the innovation system to create wealth and attain socially beneficial innovations, together they threaten the logic of the status quo approach to innovation policy. In the short-term, governments can only maintain current levels of innovation through increasingly large injections of resources. Meanwhile, at the individual and firm level, actors continue to move away from risk, toward less radical and less productive innovation. Consumers, patients and firms seeking productivity gains through innovation will see declining benefit from them both in terms of quality of life and economic growth. Measures of innovation based on patents and impact factors may rise, but these are illusions caused by strategic behavior rather than increased productivity. With declining economic productivity and declining rates of socially beneficial innovations, at some point governments may no longer be willing to fund research and development. With firms increasingly unwilling to fund the development of the basic knowledge to spur innovation, the result could very well be a further, steeper, decline in the efficiency of the innovation system.

#### Pharma patent practices serve to keep drug prices high: evergreening, product hopping, patent thickets, pay for delay

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Practices [https://fas.org/sgp/crs/misc/R46221.pdf 2/11/2020](https://fas.org/sgp/crs/misc/R46221.pdf%202/11/2020) Congressional Research Service ] // aaditg

Intellectual property (IP) rights in pharmaceuticals are typically justified as necessary to allow manufacturers to recoup their substantial investments in research, development, and regulatory approval. IP law provides exclusive rights in a particular invention or product for a certain time period, potentially enabling the rights holder (e.g., a brand-name drug manufacturer) to charge higher-than-competitive prices. If rights holders are able to charge such prices, they have an incentive to lengthen the period of exclusive rights as much as possible. Indeed, some commentators allege that pharmaceutical manufacturers have engaged in patenting practices that unduly extend the period of exclusivity. These critics argue that these patenting practices are used to keep drug prices high, without any benefit for consumers or innovation. Criticisms center on four such practices:  “Evergreening”: So-called patent “evergreening” is the practice of filing for new patents on secondary features of a particular product as earlier patents expire, thereby extending patent exclusivity past the original twenty-year term. Later-filed patents may delay or prevent entry by competitors, thereby allowing the brand-name drug manufacturer (the brand) to continue charging high prices.  “Product Hopping”: Generic drug manufacturers allege that as patents on a particular product expire, brand manufacturers may attempt to introduce and switch the market to a new, similar product covered by a later-expiring patent—a process known as “product hopping” or “product switching.” This practice takes two forms: a “hard switch,” where the older product is removed from the market, and a “soft switch,” where the older product is kept on the market with the new product. In either case, the brand will focus its marketing on the new product in order to limit the market for any generic versions of the old product.  “Patent Thickets”: Generic and biosimilar companies also allege that the brands create “patent thickets” by filing numerous patents on the same product. These thickets allegedly prevent generics from entering the market due to the risk of infringement and the high cost of patent litigation.  “Pay-for-Delay” Settlements: Litigation often results when a generic or biosimilar manufacturer attempts to enter the market with a less expensive version of a branded pharmaceutical. Core issues usually include whether the brand’s patents are valid, and whether the generic or biosimilar product infringes those patents. Rather than litigate these issues to judgment, however, the parties will often settle. Such settlements may involve the brand paying the generic or biosimilar to stay out of the market—referred to as “reverse payment” or “pay-for-delay” settlements. These settlements are allegedly anticompetitive because they allow the brand to continue to charge high prices without risking invalidation of its patent, thus unjustifiably benefiting the settling companies at the expense of the consumer.

#### That fuels monopolies stifling innovation.

Bryan Mercurio 14, Law Professor at The Chinese University of Hong Kong, “TRIPs, Patents, and Innovation: A Necessary Reappraisal?” <https://e15initiative.org/wp-content/uploads/2015/09/E15-Innovation-Mercurio-FINAL.pdf>

Identifying the factors that stimulate innovation is difficult (Lemley 2000), and attention must be paid to the different kinds of innovation--cumulative innovation; horizontal (basic) innovation; and vertical (applied) innovation. The impact of patent protection can differ on each of these types of innovation. For instance, where cumulative innovation occurs--that is, where a single product may rely on inventions owned by a number of firms--“there is good reason to think that the patent system may discourage innovation overall rather than encouraging it” (Bessen and Maskin 2009; Chu et al. 2012). Shapiro (2001) finds that “with cumulative innovation and multiple blocking patents, stronger patent rights can have the perverse effect of stifling, not encouraging innovation.” In such a situation, multiple licences have to be purchased; uncertainty regarding the status of the technology persists; and the value of patent licensing is questioned (Heller 2008; Boldrin and Levine 2008). Lawsuits become the norm; costs rise as firms defend claims and play the game by defensively purchasing patents; and innovation suffers (Boldrin and Levine 2013; Bessen and Muerer 2008). One only needs to look at the present situation in the high-tech sector to see this cycle playing out, where as much as US$20 billion was spent in 2010-11 on patent litigation and purchases, and where a “patent tax” of up to 20 percent of R&D costs exists (Duhigg and Lohr 2012). That a limited monopoly can stifle innovation should not come as a surprise given that competition is generally seen as a positive force in a market economy. Competition is widely thought to provide incentives for the efficient use of resources; motivation for constant progress; and protection for consumers (Vickers 1995). To some, there is an inherent contradiction between innovation and patent protection, as the latter impedes diffusion and obviates potential gains to be made from collaboration and competition (Rothbard 1962; Mises 1966; Palmer 1989; Lemley 2000; Stiglitz 2008). Thus, while Shumpeter acknowledges that competition for innovation led to temporary monopolies and argues that these monopolies were in turn replaced when new firms further innovated (1976), Stiglitz demonstrates that the established monopolies became entrenched as costs and externalities reduced incentives for displacement (Stiglitz and Walsh 2005). In turn, insufficient diversity among patent holders (a lack of so-called “equilibrium diversity”) encourages them to focus R&D on improving existing technologies through incremental improvements, as opposed to investing in R&D to develop new technologies and products (Acemoglu 2011).In essence, this is what the European Commission alleged in its prosecution of Microsoft for anti-competitive behaviour. There, the Commission deemed Microsoft to be a dominant player, which used its near-monopoly power to reduce “talent and capital invested in innovation” in a manner that “limits the prospects for ... competitors to successfully market innovation and thereby discourages them from developing new products” (2004). The negative effect on innovation is exacerbated by a number of factors, including the growing problem of patent thickets. Owing to the“difficulty of determining the boundaries” of patent claims, there are often multiple and competing claims over one or more aspects of an invention- -situations which, Stiglitz states, “especially impede innovation” (2008). While patent thickets have existed for more than a hundred years (a patent thicket impeded the development and commercialization of the airplane), they have more recently become particularly widespread in the electronics industry (GAO 2013). Other factors, such as defensive patenting and the extortion-like practices of socalled patent trolls, have likewise substantially increased the risk of net welfare loss and less innovation (Bessen et al. 2011; Tucker 2011). Recent studies even find that patent pool arrangements result in reduced innovation by member-firms (Lampe and Moser 2010; Joshi and Nerkar 2011; Lampe and Moser 2012). Evidence also exists to show that stronger patent protection leads not to enhanced innovation or an improvement in overall welfare, but to firms protecting their interests by advocating even more protection (Landes and Posner 2003). In so doing, firms divert resources away from R&D, and into lobbyists and lawsuits. Boldrin and Levine (2013) refer to this as the political economy effect, where patent protection keeps increasing due to the lobbying efforts of entrenched firms, and without regard to the system as a whole. In their view, such behavior distorts the optimum range of protection and unbalances the entire system. In conclusion, while it is a certainty that patent protection increases patent applications and the number of patents granted, there is little to no solid evidence that it leads to increased innovation (Boldrin and Levine 2013; Scherer 2009; Lerner 2009; Gallini 2002; Jaffe 2000). Since the evidence suggests that “policy changes that strengthen patent protection … [do] not spur innovation” (Lerner 2002; UNCTAD 2011), it is unsurprising that “there is widespread unease that the costs of stronger patent protection may exceed the benefits” (Jaffe 2002). POTENTIAL RESPONSES To establish the economic significance and value of patents, it is necessary to weigh their social costs against their social benefits. Hall et al. (2012) explain, In principle a patent will function to increase fixed (and most likely sunk) costs of entry into a market where the invention protected by the patent is practiced. This will reduce entry and therefore competition. From a welfare perspective, this is the price society pays in order to encourage invention and innovation by the initial entrant. What results is a trade‐off between the interests of the incumbent holding the patent and the potential entrant excluded by it. In the case of patents, policy makers need to come to a view of how much protection to afford the patentee in order to create incentives for R&D. Given the trade-off between innovation and access, policy should be designed to reach the “optimal scope of IPRs protection”--that is, a “balance between the social benefit of innovation and the social cost of monopolistic distortion” (Nordhaus 1969). It is this balance that some believe is now lopsided. This section focuses on what can be done within the confines of the WTO to ensure that patent protection stimulates innovation and that the benefits are in balance with social costs. It goes beyond merely describing the available flexibilities offered by TRIPS to Members or analyzing the use of such tools. This work has been done (Mercurio 2013; Declaration on Patent Protection 2014), but does not go to the heart of the issue-- that of the link between IPRs and innovation. Moreover, given the definitional vagueness and uncertainty of the boundaries of patent claims and rights, countries have become risk averse and are unlikely to take action that may be viewed as inconsistent with the TRIPS Agreement. The discussion and debate must now move beyond the well-known but little used flexibilities to encompass the broader and more fundamental issue of whether IPRs--and correspondingly the TRIPS Agreement-- actually encourage innovation. In a sense, all the potential responses are radical in that they all require a shift from the status quo and amendment to the TRIPS Agreement. For this reason, none are likely to be feasible in the short, and perhaps even medium, term. This does not mean that potential responses should not be discussed. As the economic data and evidence against the current form and level of patent protection mounts, alternatives will become more realistic options. Radical proposals aimed at promoting innovation deserve to feature in the debate. The remainder of this section raises four alternatives to the status quo for discussion.

#### Extinction - generic defense doesn’t apply.

Srivatsa 17 Kadiyali Srivatsa 1-12-2017 “Superbug Pandemics and How to Prevent Them” <https://www.the-american-interest.com/2017/01/12/superbug-pandemics-and-how-to-prevent-them/> (doctor, inventor, and publisher. He worked in acute and intensive pediatric care in British hospitals)//Elmer

It is by now no secret that the human species is locked in a race of its own making with “**superbugs**.” Indeed, if popular science fiction is a measure of awareness, the theme has pervaded English-language literature from Michael Crichton’s 1969 Andromeda Strain all the way to Emily St. John Mandel’s 2014 Station Eleven and beyond. By a combination of massive inadvertence and what can only be called stupidity, we must now invent new and effective antibiotics faster than deadly bacteria evolve—and regrettably, they are rapidly doing so with our help. I do not exclude the possibility that bad actors might deliberately engineer deadly superbugs.1 But even if that does not happen, humanity faces an existential threat largely of its own making in the absence of malign intentions. As threats go, this one is entirely predictable. The concept of a “black swan,” Nassim Nicholas Taleb’s term for low-probability but high-impact events, has become widely known in recent years. Taleb did not invent the concept; he only gave it a catchy name to help mainly business executives who know little of statistics or probability. Many have embraced the “black swan” label the way children embrace holiday gifts, which are often bobbles of little value, except to them. But the threat of inadvertent pandemics is not a “black swan” because its probability is not low. If one likes catchy labels, it better fits the term “gray rhino,” which, explains Michele Wucker, is a high-probability, high-impact event that people manage to ignore anyway for a raft of social-psychological reasons.2 A pandemic is a quintessential gray rhino, for it is no longer a matter of if but of when it will challenge us—and of how prepared we are to deal with it when it happens. We have certainly been warned. The curse we have created was understood as a possibility from the very outset, when seventy years ago Sir Alexander Fleming, the discoverer of penicillin, predicted antibiotic resistance. When interviewed for a 2015 article, “The Most Predictable Disaster in the History of the Human Race, ” Bill Gates pointed out that one of the costliest disasters of the 20th century, worse even than World War I, was the Spanish Flu pandemic of 1918-19. As the author of the article, Ezra Klein, put it: “No one can say we weren’t warned. And warned. And warned. A pandemic disease is the most predictable catastrophe in the history of the human race, if only because it has happened to the human race so many, many times before.”3 Even with effective new medicines, if we can devise them, we must contain outbreaks of bacterial disease fast, lest they get out of control. In other words, we have a social-organizational challenge before us as well as a strictly medical one. That means getting sufficient amounts of medicine into the right hands and in the right places, but it also means educating people and enabling them to communicate with each other to prevent any outbreak from spreading widely. Responsible governments and cooperative organizations have options in that regard, but even individuals can contribute something. To that end, as a medical doctor I have created a computer app that promises to be useful in that regard—of which more in a moment. But first let us review the situation, for while it has become well known to many people, there is a general resistance to acknowledging the severity and imminence of the danger. What Are the Problems? Bacteria are among the oldest living things on the planet. They are masters of survival and can be found everywhere. Billions of them live on and in every one of us, many of them helping our bodies to run smoothly and stay healthy. Most bacteria that are not helpful to us are at least harmless, but some are not. They invade our cells, spread quickly, and cause havoc that we refer to generically as disease. Millions of people used to die every year as a result of bacterial infections, until we developed antibiotics. These wonder drugs revolutionized medicine, but one can have too much of a good thing. Doctors have used antibiotics recklessly, prescribing them for just about everything, and in the process helped to create strains of bacteria that are resistant to the medicines we have. We even give antibiotics to cattle that are not sick and use them to fatten chickens. Companies large and small still mindlessly market antimicrobial products for hands and home, claiming that they kill bacteria and viruses. They do more harm than good because the low concentrations of antimicrobials that these products contain tend to kill friendly bacteria (not viruses at all), and so clear the way for the mass multiplication of surviving unfriendly bacteria. Perhaps even worse, hospitals have deployed antimicrobial products on an industrial scale for a long time now, the result being a sharp rise in iatrogenic bacterial illnesses. Overuse of antibiotics and commercial products containing them has helped superbugs to evolve. We now increasingly face microorganisms that cannot be killed by antibiotics, antifungals, antivirals, or any other chemical weapon we throw at them. Pandemics are the major risk we run as a result, but it is not the only one. Overuse of antibiotics by doctors, homemakers, and hospital managers could mean that, in the not-too-distant future, something as simple as a minor cut could again become life-threatening if it becomes infected. Few non-medical professionals are aware that antibiotics are the foundation on which nearly all of modern medicine rests. Cancer therapy, organ transplants, surgeries minor and major, and even childbirth all rely on antibiotics to prevent infections. If infections become untreatable we stand to lose most of the medical advances we have made over the past fifty years. And the problem is already here. In the summer of 2011, a 43-year-old woman with complications from a lung transplant was transferred from a New York City hospital to the Clinical Center at the National Institutes of Health (NIH), in Bethesda, Maryland. She had a highly resistant superbug known as Klebsiella pneumoniae carbapenemase (KPC). The patient was treated and eventually discharged after doctors concluded that they had contained the infection. A few weeks later, a 34-year-old man with a tumor and no known link to the woman contracted KPC while at the hospital. During the course of the next few months, several more NIH patients presented with KPC. Doctors attacked the outbreak with combinations of antibiotics, including a supposedly powerful experimental drug. A separate intensive care unit for KPC patients was set up and robots disinfected empty rooms, but the infection still spread beyond the intensive care area. Several patients died and then suddenly all was silent on the KPC front, with doctors convinced they had seen the last of the dangerous bacterium. They couldn’t have been more mistaken. A year later, a young man with complications from a bone marrow transplant arrived at NIH. He became infected with KPC and died. This superbug is now present in hospitals in most, if not all U.S. states. This is not good. This past year an outbreak of CRE (carbapenem-resistant enterobacteriaceae) linked to contaminated medical equipment infected 11 patients and killed two in Los Angeles area hospitals. This family of bacteria has evolved resistance to all antibiotics, including the powerful carbapenem antibiotics that are often used as a last resort against serious infections. They are now so resilient that it is virtually impossible to remove them from medical tools such as catheters and breathing tubes placed into the body, even after cleaning. Then we have gonorrhea, chlamydia, and other sexually transmitted diseases that we cannot treat and that are spreading all over the world. Anyone who has sex can catch these infections, and because most people may not exhibit any symptoms they spread infections without anyone knowing about it. Sexually transmitted diseases used to be treatable with antibiotics, but in recent years we have witnessed the rise of multi-drug resistant STDs. Untreated gonorrhea can lead to infertility in men and women and blindness and other congenital defect in babies. As is well known, too, we have witnessed many cases of drug-resistant pneumonia. These problems have arisen in part because of simple mistakes healthcare professionals repeatedly make. Let me explain. Neither superbugs nor common bacterial infections produce any special symptoms indicative of their cause. Rashes, fevers, sneezing, runny noses, ear pain, diarrhea, vomiting, coughing, fatigue, and weakness are signs of common and minor illnesses as well as uncommonly deadly ones. Therefore, the major problem for clinicians is to identify a common symptom that may potentially be an early sign of a major infection that could result in an epidemic. We know that dangerous infections in any given geographical area do not start at the same time. They start with one victim and gradually spread. But that victim is only one among hundreds of patients a doctor will typically see, so many doctors will miss patients presenting with infections that are serious. They will probably identify diseases that kill fast, but slow-spreading infections such as skin infections that can lead to septicemia are rarely diagnosed early. In addition, I have seen doctors treating eczema with antibiotic cream, even though they know that bacteria are resistant to the majority of these drugs. This sort of action encourages simple infections to spread locally, because patients are therefore not instructed to take other, more useful precautions. On top of that, some people are frivolous about infections and assume doctors are exaggerating the threat. And some people are selfish. Once I was called to see a passenger during a flight who had symptoms consistent with infection. He boarded the plane with these symptoms, but began to feel much worse during the flight. I was scared, knowing how infections such as Ebola can spread. This made me think about a way to screen passengers before they board a flight. Airlines could refund a traveler’s ticket, or issue a replacement, in case of sickness—which is not the policy now. We currently have no method to block infectious travelers from boarding flights, and there are no changes in the incentive system to enable conscientious passengers to avoid losing their money if they responsibly miss a flight because of illness. Speaking of selfishness, I once saw a mother drop her daughter off at school with a serious bout of impetigo on her face. When I asked her why she had brought her daughter to school with a contagious infection, she said she could not spare the time to keep her at home or take her to the doctor. By allowing this child to contact other children, a simple infection can become a major threat. Fortunately, I could see the rash on the girl’s face, but other kids in schools may have rashes we cannot see. Incorrect diagnosis of skin problems and mistaken use of antibiotics to treat them is common all over the world, and so we are continually creating superbugs in our communities. Similarly, chest infections, sore throats, and illnesses diagnosed as colds that unnecessarily treated with antibiotics are also a major threat. By prescribing antibiotics for viral infections, we are not only helping bacteria develop resistance, but we are also polluting the environment when these drugs are passed in urine and feces. All of this helps resistant bacteria to spread in the community and become an epidemic. Ebola is very difficult to transmit because people who are contagious have visible and unusual symptoms. However, the emerging infections and pandemics of the future may not have visible symptoms, and they could break out in highly populous countries such as India and China that send thousands of travelers all over the world every day. When a person is infected with a contagious disease, he or she can expect to pass the illness on to an average of two people. This is called the “reproduction number.” Two is not that high a number as these things go; some diseases have far greater rates of infection. The SARS virus had a reproduction number of four. Measles has a reproduction number of 18. One person traveling as an airplane passenger and carrying an infection similar to Ebola can infect three to five people sitting nearby, ten if he or she walks to the toilet. The study that highlighted this was published in a medical journal a few years ago, but the airline industry has not implemented any changes or introduced screening to prevent the spread of infections by air travel passengers, a major vehicle for the rapid spread of disease. It is scary to think that nobody knows what will happen when the world faces a lethal disease we’re not used to, perhaps with a reproduction number of five or eight or even ten. What if it starts in a megacity? What if, unlike Ebola, it’s contagious before patients show obvious symptoms? Past experience isn’t comforting. In 2009, H1N1 flu spread around the world before we even knew it existed. The Questions Remains Why do seemingly intelligent people repeatedly do such collectively stupid things? How did we allow this to happen? The answer is disarmingly simple. It is because people are incentivized to prioritize short-term benefits over long-term considerations. It is what social scientists have called a “logic of collective action” problem. Everyone has his or her specialized niche interest: doctors their patients’ approval, business and airline executives their shareholders’ earnings, hospitals their reputations for best-practice hygienics, homemakers their obligation to keep their own families from illness. But no one owns the longer-term consequences for hundreds of millions of people who are irrelevant to satisfying these short-term concerns. Here is an example. At a recent Superbug Super Drug conference in London that I attended, scientists, health agencies, and pharmaceutical companies were vastly more concerned with investing millions of dollars in efforts to invent another antibiotic, claiming that this has to be the way forward. Money was the most pressing issue because, as everyone at the conference knew, for many years pharmaceutical companies have been pulling back from antibiotics research because they can’t see a profit in it. Development costs run into billions of dollars, yet there is no guarantee that any new drug will successfully fight infections. At the same conference Dr. Lloyd Czaplewski spoke about alternatives to antibiotics, in case we cannot come up with new ones fast enough to outrun superbug evolution. But he omitted mention of preventive strategies that use the internet or communication software to help reduce the spread of infections among families, communities, and countries. It is madness that we don’t have a concrete second-best alternative to new antibiotics, because we need them and we need them quickly. Of course, this is why we have governments, which have been known occasionally in the past as commonwealths. Governments are supposed to look out for the wider, common interests of society that niche-interested professionals take no responsibility for, and that includes public health. It is why nearly every nation’s government has an official who is analogous to the U.S. Surgeon General, and nearly every one has a public health service of some kind. Alas, national governments do not always function as they should. Several years ago physician and former Republican Senator Bill Frist submitted a proposal to the Senate for a U.S. Medical Expeditionary Corps. This would have been a specialized organization that could coordinate and execute rapid responses to global health emergencies such as Ebola. Nothing came of it, because Dr. Frist’s fellow politicians were either too shortsighted or too dimwitted to understand why it was a good idea. Or perhaps they simply realized that they could not benefit politically from supporting it. Plenty of mistakes continue to be made. In 2015, a particularly infectious form of bird flu ripped through 14 U.S. states, leading farmers to preventively slaughter nearly 40 million birds. The result of such callous and unnecessary acts is that, instead of exhausting themselves in the host population of birds, the viruses quickly find alternative hosts in which to survive, and could therefore easily mutate into a form that can infect humans. Earlier, during the 1980s, AIDS garnered more public attention because a handful of rich and famous people were infected, and because the campaign to eradicate it dovetailed with and boosted the political campaign on behalf of homosexual rights. Methicillin resistant Staphylococcus aureus (MRSA) in hospitals, by far the bigger threat at the time, was virtually ignored. Some doctors knew that MRSA would bring us to our knees and kill millions of people worldwide, but pharmaceutical companies and device and equipment manufacturers ignored these doctors and the thousands of patients dying in hospitals as a result of MRSA. They prioritized the wrong thing, and government did not correct the error. And that is partly how antibiotic-resistant infection went from an obscure hospital problem to an incipient global pandemic. Politics well outside the United States plays several other roles in the budding problem that we are confronting. Countries often will not admit they have a problem and request help because of the possible financial implications in terms of investment and travel. Guinea did not declare the Ebola epidemic early on and Chinese leaders, worried about trade and tourism, lied for months in 2002 about the presence of the SARS virus. In 2004, when avian influenza first surfaced in Thailand, officials there displayed a similar reluctance to release information. Hospitals in some countries, including India, are managed and often owned by doctors. They refuse to share information about existing infections and often categorically deny they have a problem. Reporting infections to public health authorities is not mandatory, and so hospitals that fail to say anything are not penalized. Even now, the WHO and the CDC do not have accurate and up-to-date information about the spread of E. coli or other infections, and part of the reason is that for-profit hospitals are reluctant to do anything to diminish their bottom line. Syria and Yemen are among those countries that are so weak and fragmented that they cannot effectively coordinate public healthcare. But their governments are also hostile to external organizations that offer relief. Part of the reason is xenophobia, but part is that this makes the government look bad. Relatedly, most poor-nation governments do not trust the efficacy of international institutions, and think that cooperating with them amounts to a re-importation of imperialism. They would rather their own people suffer and die than ask for needed help. That brings us to the level of international public health governance. Alas, sometimes poor-country governments estimate the efficacy of international institutions accurately. The WHO’s Ebola response in 2014-15 was a disaster. The organization was slow to declare a public health emergency even after public warnings from Médecins Sans Frontières, some of whose doctors had already died on the front line. The outbreak killed more than 28,000 people, far more than would have been the case had it been quickly identified. This isn’t just an issue of bureaucratic incompetence. The **WHO is under-resourced for the problems it is meant to solve. Funding comes from voluntary donations, and there is no mechanism by which it can quickly scale up its efforts during an emergency. The result is that its response to the next major disease outbreak is likely to be as inadequate as were its responses to Ebola, H1N1, and SARS**. Stakeholders admit that we need another mechanism, and most experts agree that the world needs some kind of emergency response team for dangerous diseases. But no one knows how to set one up amid the dysfunctional global governance structures that presently exist. Maybe they should turn to Bill Frist, whose basic concept was sound; if the U.S. government will not act, perhaps some other governments will, and use the UN system to do so. But as things stand, we lack a health equivalent of the military reserve. Neither government leaders nor doctors can mobilize a team of experts to contain infections. People who want to volunteer, whether for government or NGO efforts, are not paid and the rules, if any, are sketchy about what we do with them when they return from a mission. Are employers going to take them back? What are the quarantine rules? It is all completely ad hoc, meaning that humanity lacks the tools it needs to protect itself. And note, by the way, the contrast between how governments prepare for facing pandemics and how they prepare for making war. War is not more deadly to the human race than pandemics, but national defense against armed aggression is much better planned for than defense against threats to public health. There is a wealth of rules regarding it, too. Human beings study and plan for war, which kills people both deliberately and accidentally, but they do not invest comparable effort planning for pandemics, which are liable to kill orders of magnitude more people. To the mind of a medical doctor, this is strange. Creating Conditions for Infections to Spread Superbug infections spread for several interlocking reasons. Some are medical-epidemiological. Most of the infections of the past thirty years have started in one place and in one family. As already noted, they spread because many infectious diseases are highly contagious before the onset of symptoms, and because it is difficult to prevent patients who know they are sick from going to hospitals, work, and school, or from traveling further afield. But again, one reason for the problem is political, not medical. Many governments have no strategies in place to prevent pandemics because they are unwilling to tell their people how infections spread. They don’t want to worry people with such talk; it will make them, they fear, unpopular. So governments may have mountains of bureaucracy with great heaps of rules and regulations concerning public health, but they are generally unwilling to trust their own citizens to use common sense on their own behalf. This, too, seems very strange. Until now, no one has come forward to help us develop strategies to educate people how to identify and prevent the spread of infection to their families and communities. The majority of stakeholders have also been oblivious to the use of new technologies to help reduce the spread of these infections. There are some exceptions. In a fun blog post called Preparedness 101: Zombie Apocalypse, the CDC uses the threat of a zombie outbreak as a metaphor to encourage people to prepare for emergencies, including pandemics. It is well meaning and insightful, yet when my colleagues and I try to discuss ways of scaling up the CDC’s example with doctors and nurses, they shut down. Nobody plans for an actual crisis partly because it is too scary and hence paralyzing to think about. But it is also because it is not most health professionals’ job; it is not what they are trained and paid to do. It is always someone else’s job, except that it has turned out to be nobody’s job. Worse, the situation is not static. While we sit paralyzed, superbugs are evolving. Epidemiological models now predict how an algorithmic process of disease spread will move through the modern world. All urban centers around the entire globe can become infected within sixty days because we move around and cross borders much more than our ancestors did, thanks to air travel. A new pandemic could start crossing borders before we even know it exists. A flu-like disease could kill more than 33 million people in 250 days.3

### 1AC - Solvency

#### Plan: The member nations of the World Trade Organization ought to reduce intellectual property protections for medicines

-bans method such as evergreening, patent thickets, fake orphan patents, and pay for delay

Feldman 19 Robin Feldman 2-11-2019 "‘One-and-done’ for new drugs could cut patent thickets and boost generic competition" <https://www.statnews.com/2019/02/11/drug-patent-protection-one-done/> (Arthur J. Goldberg Distinguished Professor of Law, Albert Abramson ’54 Distinguished Professor of Law Chair, and Director of the Center for Innovation)//SidK + Elmer

**Here is your CSA - https://www.ip-watch.org/2018/09/21/follow-pharmaceutical-innovations-eligible-patent-protection/**

I believe that one period of protection **should be enough**. We should make the legal changes necessary to prevent companies **from building patent walls** and piling up mountains of rights. This could be accomplished **by a “one-and-done” approach** for patent protection. Under it, a drug would receive just one period of exclusivity, and no more. The choice of which “one” could be left entirely in the hands of the pharmaceutical company, with the election made when the FDA approves the drug. Perhaps development of the drug went swiftly and smoothly, so the remaining life of one of the drug’s patents is of greatest value. Perhaps development languished, so designation as an orphan drug or some other benefit would bring greater reward. The choice would be up to the company itself, based on its own calculation of the maximum benefit. The result, however, is that a pharmaceutical company chooses whether its period of exclusivity would be a patent, an orphan drug designation, a period of data exclusivity (in which no generic is allowed to use the original drug’s safety and effectiveness data), or something else — but **not all of the above** and more. Consider Suboxone, a combination of buprenorphine and naloxone for treating opioid addiction. The drug’s maker has extended its protection cliff eight times, including obtaining an orphan drug designation, which is intended for drugs that serve only a small number of patients. The drug’s first period of exclusivity ended in 2005, but with the additions its protection now lasts until 2024. That makes almost two additional decades in which the public has borne the burden of monopoly pricing, and access to the medicine may have been constrained. Implementing a one-and-done approach in conjunction with FDA approval underscores the fact that these problems and solutions are designed for pharmaceuticals, not for all types of technologies. That way, one-and-done could be implemented through **legislative changes to the FDA’s drug approval system**, and would apply to patents granted going forward. One-and-done would apply to both patents and exclusivities. A more limited approach, a baby step if you will, would be to invigorate the existing patent obviousness doctrine as a way to cut back on patent tinkering. Obviousness, one of the five standards for patent eligibility, says that inventions that are obvious to an expert or the general public can’t be patented. Either by congressional clarification or judicial interpretation, many pile-on patents could be eliminated with a ruling that the core concept of the additional patent is nothing more than the original formulation. Anything else is merely an obvious adaptation of the core invention, modified with existing technology. As such, the patent would fail for being perfectly obvious. Even without congressional action, a more vigorous and robust application of the existing obviousness doctrine could significantly improve the problem of piled-up patents and patent walls. Pharmaceutical companies have become adept at maneuvering through the system of patent and non-patent rights to create mountains of rights that can be applied, one after another. This behavior lets drug companies keep competitors out of the market and beat them back when they get there. We shouldn’t be surprised at this. Pharmaceutical companies are profit-making entities, after all, that face pressure from their shareholders to produce ever-better results. If we want to change the system, we must change the incentives driving the system. And right now, the incentives for creating patent walls are just too great.

#### Decreasing patents doesn’t stifle innovation, but increases it through collaboration between companies – empirics

Laurie Garrett 5/21 [Laurie Garrett is a columnist at Foreign Policy, a former senior fellow for global health at the Council on Foreign Relations, and a Pulitzer Prize-winning science. MAY 7, 2021, "Stopping Drug Patents Has Stopped Pandemics Before," Foreign Policy, https://foreignpolicy.com/2021/05/07/stopping-drug-patents-pandemics-coronavirus-hiv-aids/]//anop

U.S. President Joe Biden’s waiver of patent protections for U.S.-made COVID-19 drugs and vaccines is a historic milestone and a moral imperative. It is also an overdue acknowledgement of recent experiences. Contrary to prognostications from the pharmaceutical sector that side-stepping the Trade-Related Aspects of Intellectual Property Rights (TRIPS) component of the World Trade Organization (WTO) will mark the death knell of the drug industry, the world’s response to HIV/AIDS long ago demonstrated that patents stymie accessible treatment, cost lives, and offer little bona fide enhancement of innovation. There are challenges that lie ahead—but harm to pharmaceutical companies or future patients who will rely on their productivity do not count among them. Consider what happened in the years after 1996, when a consortium of pharmaceutical companies took the unprecedented step of sharing their HIV/AIDS treatment data and manufacturing, resulting in a collaboration that was the turning point for what had been a catastrophically grim pandemic. By working together, the companies demonstrated that any one anti-HIV/AIDS drug, taken as monotherapy, would fail, possibly even hasten the pace of the disease process. But when taken in combinations of three or four drugs, made by usually rival companies, the antiviral assault was so powerful that people bounced back from the edge of death like the Biblical Lazarus who was resurrected by Jesus. As millions of HIV positive people living in wealthy countries switched overnight from planning their funerals to building up retirement accounts, the miracle of combination antiviral therapy was denied to millions more living with AIDS in sub-Saharan Africa and other poorer regions. A battle unfolded, pitting a reluctant—even obstinate—pharmaceutical industry against AIDS activists, physicians, and political leaders from developing countries. In 2002, former U.S. President Bill Clinton intervened, using his bully pulpit in consultation with a team of academic experts convened by his philanthropic foundation to contrive a tech-transfer scheme that had Western pharmaceutical companies provide their patented drug formulas to Indian generic manufacturing companies, ultimately bringing down annual treatment costs from nearly $10,000 to less than $100. Far from bringing chaos to the pharmaceutical industry and stifling innovation, the Clinton Foundation’s maneuver around the strict enforcement of intellectual property laws ushered in a dramatic era of HIV drug invention that improved the antiviral power of treatment, lowered drug side effects, developed new drug forms that are now taken to prevent infection, increased options for pediatric care, and greatly improved the methods for which HIV positive individuals could take their life-sparing treatments. Despite the loss of guaranteed patent protection and pressure to transfer technology to, primarily, Indian pharmaceutical companies, wealthy nations’ drug companies have profited and continue to innovate on the HIV/AIDS front. You can support Foreign Policy by becoming a subscriber. SUBSCRIBE TODAY Of the multiple COVID-19 vaccines currently in use, the most promising—the mRNA and adenovirus vector products—all arose from government-funded research, mostly based in academic research centers. AstraZeneca’s vaccine, for example, grew out of the United Kingdom’s government-back research and development at Oxford University. The Moderna and Pfizer mRNA vaccines grew out of years of National Institutes of Health-funded research in the United States and with predecessor Ebola vaccines in the Democratic Republic of the Congo, Guinea, Sierra Leone, and Liberia. China’s vaccine built on years of military immunization work. And thanks to Operation Warp Speed, many companies involved in the vaccine chain of production have benefited with a total of $18 billion of U.S. government subsidies. The speed and scale of COVID-19 vaccine production in the United States is largely thanks to the country’s taxpayers. This week, Pfizer reported earning $3.5 billion in profits during the first quarter of this year from its COVID-19 vaccine. Moderna earned the first profits the fledgling company has ever seen—$1.73 billion—and projects nearly $20 billion in earnings this year. Despite setbacks, both the AstraZeneca and Johnson & Johnson adenovirus vector vaccines are making handy profits, projected to each garner multiple billions of dollars this year. Even Sinopharm from China and Gamaleya from Russia expect to reap ample profits in 2021, both in cash and diplomacy, as they sell vaccines directly to key governments. The Novavax company, which makes a not-yet-approved protein vaccine, expects massive earnings in late 2021. Despite the threat of patent-voiding, all of these companies—as well as a long list of would-be vaccine makers further back in the research and development pipeline—have continued to innovate, trying to find formulations that can battle variant strains of the virus; be stored at room temperature; and get administered via skin patches, orally, or in a nasal mist. The creativity at these companies continues—and there’s no reason to think it will stop anytime soon. It remains to be seen how many countries with big pharmaceutical industries will follow the Biden administration’s lead in liberalizing patent protections for COVID-19-related vaccines and drugs. The WTO operates by consensus from member states, so the United States can’t unilaterally alter the global landscape. But Ngozi Okonjo-Iweala, the new WTO director-general, is already raising the heat. A former Nigerian minister of finance, ex-World Bank official, and the first African and woman to hold the coveted World Trade Organization position, Okonjo-Iweala made it clear from her first day in office that a TRIPS-waiver for COVID-19-related products was her top priority. But even if one assumes the European Union, U.K. Prime Minister Boris Johnson, Japanese Prime Minister Yoshihide Suga, and Swiss President Guy Parmelin will adopt Biden’s example, waiving patent protections on their COVID-19 products, the next challenges will be far more difficult. Adar Poonawalla, CEO of India’s Serum Institute, the world’s largest vaccine manufacturer, has complained that his company’s production facilities are already overwhelmed filling orders for generic AstraZeneca and other COVID-19 vaccines—orders places by countries other than India. The Modi government, Poonawalla said, placed a paltry order for just 15 million doses of a generic version of AstraZeneca’s vaccine in January, supplemented by an April order for 110 million doses—a drop in the bucket for a nation of more than 1.3 billion people needing a two-dose vaccine. (Poonawalla’s statements riled Modi supporters, and Poonawalla fled the country this week, staying “indefinitely” in London.) READ MORE U.S. President Joe Biden leaves after he delivered remarks on COVID-19. Can Biden’s Vaccine Patent Waiver End the Pandemic? Health experts laud a big step forward—but try explaining that to Indian or Brazilian hospitals in a deadly race against time. REPORT | MICHAEL HIRSH The vaccines aren’t easy to make. Manufacturing errors in a Maryland Emergent BioSolutions factory caused an 86 percent plummet in Johnson & Johnson vaccine supplies in early April. Complex steps in the process of isolating, purifying, preserving, storing, and delivering COVID-19 immunizations are each error-prone and require long lists of specialized chemicals and machinery. The world is in the grips now of pipette tips shortages—used to suck out chemicals and viral samples from test tubes in key steps of vaccine making. Syringes are in short supply, prompting vaccinators to toss vaccine supplies for lack of means to administer them. The sterile containers used to hold vaccines are running out. From the earliest days of the 2020 pandemic, the sorts of protective gear and machinery vaccine researchers and makers require have been in short supply, exacerbated by trade tensions between the United States and China. Swabs used for COVID-19 testing and all aspects of equipment cleaning in sterile conditions are held up in a grotesque family dispute in Maine. There aren’t enough centrifuge tubes made worldwide to spin down cell samples. Moderna and Pfizer are constantly scrambling to find the ingredients used to make the microscopic fatty balls, called liposomes, that house the mRNA molecules and carry them safely into the bloodstream. Even the nucleic acids used to construct mRNA and a long list of special enzymes used to purify those samples are in horribly short supply, largely because their use overlaps with the manufacture of COVID-19 tests. Because such delicate chemicals and proteins must be handled at deep-freeze temperatures and transported swiftly for immediate use, the entire supply chain is vulnerable to the simplest of catastrophes: weather at an airport, a car crash that blocks truck traffic, power outages, or competition for cargo space. Although waiving TRIPS requirements on COVID-19 vaccines is a spectacular, historic gesture, would-be generic makers worldwide will soon discover their efforts are stymied not by patents but for want of Avanti Polar Lipids’ liposome ingredients, Flexsafe RM special bags to hold liquid vaccines in bulk, phosphate-buffered saline solution, Distearoylphosphatidylcholine for liposome-making, 5’ cap for mRNA made by TriLink BioTechnologies, RNA polymerases—the list goes on, and on, and on. As the number of would-be vaccine makers grows, so will demand for thousands of such items, putting pressure on companies that are, in many cases, mom-and-pop operations. Worse, pressure on supplies critical for COVID-19 vaccine making is already resulting in a production loss of vital medicines for other diseases. Oxygen, after all, is ubiquitous, unpatented, free to all—unless it is needed in pure form, in a pressurized tank, or for ventilation use by a critically ill COVID-19 patient in Pune, India. On June 24, the World Health Organization held a press conference in Geneva merely to plead for help obtaining 14,000 oxygen concentrators to generate 620,000 cubic meters of oxygen per day, just for India. Scaling up vaccine production to produce enough doses to fully immunize more than 7.8 billion people will require a level of international coordination and cooperation never previously seen. Knocking down patent barriers on the final vaccine formulations is a start, but that’s all that it is.

### Underview

#### [1] 1AR theory –

#### A. AFF gets it because otherwise the neg can engage in infinite abuse, making debate impossible.

#### B. Drop the debater – the short 1AR irreparably skewed from abuse on substance and time investment on theory.

#### C. No RVIs – the 6-minute 2nr can collapse to a short shell and get away with infinite 1nc abuse via sheer brute force and time spent on theory.

#### [2] AFF RVIs —

#### A. Skew – there’s no 2AC to develop carded offense and the 1AR has to over-cover since the 6 minute 2NR is devastating which encourages them to under-develop T in the NC and over-develop in the NR – need the RVI to develop good, in-depth T offense

#### B. Reciprocity – T is a unique avenue to the ballot that the aff can’t access – makes T structurally unfair without the RVI.

#### [3] Reasonable aff interps —

#### A. There are multiple T interps the 1NC can read, like spec good or spec bad, which the aff will always violate —if the interp the aff picked is okay, you should default to substance – outweighs – topic ed is unique to this resolution – where the majority of debate education occurs

#### B. There’s only 4 minutes for the 1AR to generate offense, answer standards, and weigh while still covering all substance—reasonable aff interps allow us to actually get education

#### [4] Presumption and Permissibility Affirm –

#### A. Affirmation theory—affirm means to put support for or defend—presumption means nothing attacks, so therefore it is defended and meets affirming

Declare one's support for; uphold; defend.

That’s Lexico <https://www.lexico.com/en/definition/affirm>

#### B. Statements are more often true then false—we can regard an entire statement as true but changing every part of a statement false makes it true and creates contradictions or regarding everything as false creates contradictions. Also you assume something is true—if I say my favorite color is blue you believe me

#### C. Regress – assuming that the resolution is false presumes that statements are true, which concedes that presumption affirms

### Method

**Policy analysis is key to critical skills and real world policy change**

John **Hird 17**. Dean of the College of Social and Behavioral Sciences and Professor of Political Science and Public Policy, University of Massachusetts Amherst. “How Effective is Policy Analysis,” in D. Weimer & L. S. Friedman (eds.) Does Policy Analysis Matter? Exploring Its Effectiveness in Theory and Practice. University of California Press. 44-76.

Classical policy analysis, however absent from actual policy making, remains an important vehicle for teaching policy analysts the connections between their analysis and the policymaking world in which their recommendations would live. **Even if** it implies more power than analysts will ever have, classical **policy analysis** teaches that politics, law, implementation, social structures, organizational behavior, and other factors are **critical to policy outcomes** and must play key roles in **thinking through** possible ways to address policy problems. **Bringing policy ideas to fruition**, bridging the worlds of research and policy making, is a **critical skill** for analysts to develop. In addition, policy schools are instilling in prospective policy analysts the structure and habits of mind to engage successfully in the policy enterprise. 28 Teaching **disciplined thinking** for public service is important. Policy analysts not only have a **problem-oriented**, **interdisciplinary** approach to policy and the **ability to synthesize** and **bring policy relevance** to problems that social scientists are not trained for, but they understand the "rational lunacy of policy-making systems" (Weiss 2009). In the absence of written classical policy analyses, policy analysts become their human embodiment. Their training will provide a mental picture of how a classical policy analysis should be performed. They can derive elements of policy analysis from writing position papers, briefing policy makers, and controlling meetings. They **anticipate counterarguments** and frame their analyses recognizing alternative options. In short, the **mental map** of a policy analysis allows good policy analysts not only to be effective in their jobs but also to **advance** into the **public debate** the appropriate elements of a policy analysis. Further, the **problem orientation** of policy analysis **focuses** at least some **attention** on **social problems**, not just political expediency. The role of policy analysts is not merely to translate research for policy makers, but to use creative means to turn available knowledge about the implications of various policy options into actionable policy recommendations appropriate for their clients. This is a subtle skill requiring attention to both political realities and the best available research. Finally, prospective policy analysts are instructed repeatedly about the importance of their relationship to the client(s), yet far less attention is paid to the other part of the policy analyst's relationship: to the community of knowledge producers. Policy analysts play **critical roles as intermediaries** between "custodians of the knowable" and policy makers. Their training should include the ability to **understand** and **interpret** the academic literature on a topic at a **far deeper level** than most journalists have the time or, often, the analytic skill set to uncover. Identifying and **connect**ing **pertinent knowledge** and **analysis** with policy makers should be a core principle of a public policy education. Policy analysts may offer the central means to provide policy makers with the key elements of classical policy analysis, though not in the way, through written reports, it was originally conceived. Creating a profession for committed, accomplished, and well-trained individuals to participate in the world of public policy may be among the most important contributions of policy analysis education.

**[3] A particularist approach is key- overarching theories ignore material injustice.**

**Pappas 16.** (Gregory Fernando Pappas [Texas A&M University] “The Pragmatists’ Approach to Injustice”, The Pluralist Volume 11, Number 1, Spring 2016, BE

The pragmatists’ approach should be distinguished from nonideal theories whose starting point seems to be the injustices of society at large that have a history and persist through time, where the task of political philosophy is to detect and diagnose the presence of these historical injustices in particular situations of injustice. For example, critical theory today has inherited an approach to social philosophy characteristic of the European tradition that goes back to Rousseau, Marx, Weber, Freud, Marcuse, and others. Accord- ing to Roberto Frega, this tradition takes society to be “intrinsically sick” with a malaise that requires adopting a critical historical stance in order to understand how the systematic sickness affects present social situations. In other words, this approach assumes that¶ a philosophical critique of specific social situations can be accomplished only under the assumption of a broader and full blown critique of soci- ety in its entirety: as a critique of capitalism, of modernity, of western civilization, of rationality itself. The idea of social pathology becomes intelligible only against the background of a philosophy of history or of an anthropology of decline, according to which the distortions of actual social life are but the inevitable consequence of longstanding historical processes. (“Between Pragmatism and Critical Theory” 63)¶ However, this particular approach to injustice is not limited to critical theory. It is present in those Latin American and African American political philosophies that have used and transformed the critical intellectual tools of ¶ critical theory to deal with the problems of injustice in the Americas. For instance, Charles W. Mills claims that the starting point and alternative to the abstractions of ideal theory that masked injustices is to diagnose and rectify a history of an illness—the legacy of white supremacy in our actual society.11 The critical task of revealing this illness is achieved by adopting a historical perspective where the injustices of today are part of a larger historical narrative about the development of modern societies that goes back to how Europeans have progressively dehumanized or subordinated others. Similary, radical feminists as well as Third World scholars, as reaction to the hege- monic Eurocentric paradigms that disguise injustices under the assumption of a universal or objective point of view, have stressed how our knowledge is always situated. This may seem congenial with pragmatism except the locus of the knower and of injustices is often described as power structures located in “global hierarchies” and a “world-system” and not situations.12¶ Pragmatism only questions that we live in History or a “World-System” (as a totality or abstract context) but not that we are in history (lowercase): in a present situation continuous with others where the past weighs heavily in our memories, bodies, habits, structures, and communities. It also does not deny the importance of power structures and seeing the connections be- tween injustices through time, but there is a difference between (a) inquiring into present situations of injustice in order to detect, diagnose, and cure an injustice (a social pathology) across history, and (b) inquiring into the his- tory of a systematic injustice in order to facilitate inquiry into the present unique, context-bound injustice. To capture the legacy of the past on present injustices, we must study history but also seek present evidence of the weight of the past on the present injustice.¶ If injustice is an illness, then the pragmatists’ approach takes as its main focus diagnosing and treating the particular present illness, that is, the particular situation-bound injustice and not a global “social pathology” or some single transhistorical source of injustice. The diagnosis of a particular injustice is not always dependent on adopting a broader critical standpoint of society in its entirety, but even when it is, we must be careful to not forget that such standpoints are useful only for understanding the present evil. The concepts and categories “white supremacy” and “colonialism” can be great tools that can be of planetary significance. One could even argue that they pick out much larger areas of people’s lives and injustices than the categories of class and gender, but in spite of their reach and explanatory theoretical value, they are nothing more than tools to make reference to and ameliorate particular injustices experienced (suffered) in the midst of a particular and unique re- lationship in a situation. No doubt many, but not all, problems of injustice are a consequence of being a member of a group in history, but even in these cases, we cannot a priori assume that injustices are homogeneously equal for all members of that group. Why is this important? The possible pluralism and therefore complexity of a problem of injustice does not always stop at the level of being a member of a historical group or even a member of many groups, as insisted on by intersectional analysis. There may be unique cir- cumstances to particular countries, towns, neighborhoods, institutions, and ultimately situations that we must be open to in a context-sensitive inquiry. If an empirical inquiry is committed to capturing and ameliorating all of the harms in situations of injustice in their raw pretheoretical complexity, then this requires that we try to begin with and return to the concrete, particular, and unique experiences of injustice.¶ Pragmatism agrees with Sally Haslanger’s concern about Charles Mills’s view. She writes: “The goal is not just a theory that is historical (v. ahistori- cal), but is sensitive to historical particularity, i.e., that resists grand causal narratives purporting to give an account of how domination has come about and is perpetuated everywhere and at all times” (1). For “the forces that cause and sustain domination vary tremendously context by context, and there isn’t necessarily a single causal explanation; a theoretical framework that is useful as a basis for political intervention must be highly sensitive to the details of the particular social context” (1).13¶ Although each situation is unique, there are commonalities among the cases that permit inquiry about common causes. We can “formulate tentative general principles from investigation of similar individual cases, and then . . . check the generalizations by applying them to still further cases” (Dewey, Lectures in China 53). But Dewey insists that the focus should be on the indi- vidual case, and was critical of how so many sociopolitical theories are prone to starting and remaining at the level of “sweeping generalizations.” He states that they “fail to focus on the concrete problems which arise in experience, allowing such problems to be buried under their sweeping generalizations” (Lectures in China 53).¶ The lesson pragmatism provides for nonideal theory today is that it must be careful to not reify any injustice as some single historical force for which particular injustice problems are its manifestation or evidence for its exis- tence. Pragmatism welcomes the wisdom and resources of nonideal theories that are historically grounded on actual injustices, but it issues a warning about how they should be understood and implemented. It is, for example, sympathetic to the critical resources found in critical race theory, but with an important qualification. It understands Derrick Bell’s valuable criticism as context-specific to patterns in the practice of American law. Through his inquiry into particular cases and civil rights policies at a particular time and place, Bell learned and proposed certain general principles such as the one of “interest convergence,” that is, “whites will promote racial advantages for blacks only when they also promote white self-interest.”14 But, for pragma- tism, these principles are nothing more than historically grounded tools to use in present problematic situations that call for our analysis, such as deliberation in establishing public policies or making sense of some concrete injustice. The principles are falsifiable and open to revision as we face situation-specific injustices. In testing their adequacy, we need to consider their function in making us see aspects of injustices we would not otherwise appreciate.15