# 1NC --- Swing 2 R4

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#### ‘Scope’ is the extent of the area dealt with or relevant to the core laws

Oxford Languages ND, “scope,” shorturl.at/wCDY3

scope

the extent of the area or subject matter that something deals with or to which it is relevant.

"we widened the scope of our investigation"

#### It’s bounded by exemptions and immunities

Kruse et al. 19, Layne E. Kruse, Co-Chair; Melissa H. Maxman, Co-Chair; Vittorio Cottafavi, Vice Chair; Stephen M. Medlock, Vice Chair; David Shaw, Vice Chair; Travis Wheeler, Vice Chair; Lisa Peterson, Young Lawyer Representative; all on the Exemptions and Immunities Committee of the ABA Antitrust Section, “Long Range Plan, 2018-19,” American Bar Association, 3/18/19, https://www.americanbar.org/content/dam/aba/administrative/antitrust\_law/lrps/2019/exemptions-immunities.pdf

D. Top 3 Accomplishments Since Last Long Range Plan in 2015

(1) Publications. In addition to our Annual ALD Updates, we are set to publish an update to the Noerr-Pennington Handbook, which should be out in 2019. We also published a new version of the State Action Handbook in 2016. The Handbook on the Scope of the Antitrust Laws was published in 2015.

(2) Commentary on Legislative and Regulatory Proposals. The Committee has been very active in supporting Section commentary on proposed legislation, regulations, and other policy issues.

For instance, in March 2018, the E&I Committee assisted former E&I Chair John Roberti in composing his article, “The Role and Relevance of Exemptions and Immunities in U.S. Antitrust Law”, presented to the DOJ Antitrust Division Roundtable on behalf of the ABA Antitrust Section.

In January 2018, in response to a request from the Section Chair, we submitted Section comments along with the Legislative and State AG Committees, addressing the proposed Restoring Board Immunity Act legislation that would impact the post-NC Dental exemptions and immunity climate. Previously, we commented on the Professional Responsibility Act.

(3) Spring Meeting Programs. We have sponsored or co-sponsored a program at every Spring Meeting since our last long range plan. In 2019 we will chair Sham Litigation after FTC v. AbbVie The FTC v. AbbVie decision – calling for the disgorgement of $448 million on the basis of sham patent litigation. In addition, we will co-sponsor in 2019 with the Trade, Sports & Professional Associations Committee, a program on “Antitrust Law's Anomalous Treatment of Sports,” addressing how US courts have shown broad deference to the "rules of the game," including near-immunity status for concepts such as "amateurism."

II. Major Competition/Consumer Protection Policy or Substantive Issues Within Committee’s Jurisdiction Anticipated to Arise Over Next Three Years

A. Issue #1: Will Certain Exemptions Be Eliminated or Expanded?

A goal of the current DOJ Antitrust Division is to streamline antitrust laws, and in particular, take a hard look at exemptions and immunities. This is in the wheelhouse of our Committee’s fundamental policy issue: How much of the economy has opted out of our antitrust system? Is that a problem or are ad hoc exemptions acceptable ways to fine tune the application of the antitrust laws?

We anticipate, therefore, that efforts to enact or to repeal existing statutory exemptions and immunities will continue. In recent years, there have been efforts to repeal the exemptions for railroads and (at least in part) the McCarran-Ferguson insurance exemption. The Section and the Committee has generally supported efforts to repeal statutory exemptions. Given that repeal issues are very political it is unlikely that we will see many exemptions actually repealed.

On the other hand, proposals for new exemptions and immunities will continue to be introduced in Congress. The Committee will improve on a template for use in assisting the Section in drafting comments to Congress on newly proposed exemptions and immunities.

One development that may continue in the health care area are issues over a "COPA" or "Certificate of Public Advantage" at the state level. A COPA is a state statutory mechanism that provides certain collaborations in the health care community with immunity from private or government actions under the antitrust laws by invoking the state action doctrine. The FTC has generally opposed such efforts at the state level, but several states have used them to immunize health care mergers. This is a major development that should be monitored.

Through programs, newsletters, and Connect entries, the Committee intends to educate its members about Congressional and other efforts to repeal, or introduce new, exemptions and immunities, as well as the application of existing statutory exemptions and immunities in the courts. The Committee’s Handbook on the Scope of Antitrust Law, published in 2015, addresses developments in the statutory immunities area. It built on the prior publication, Federal Statutory Exemptions from Antitrust Law Handbook in 2007. Our Scope book will need to be updated within the next three years.

B. Issue #2: Will There Be Legislative Solutions to State Action Issues at State and Federal Levels?

The FTC’s case against the North Carolina Board of Dental Examiners put the "active supervision" prong of the state action test front and center. North Carolina State Board of Dental Examiners v. Federal Trade Commission, 135 S.Ct. 1101 (2015). The Court agreed with the FTC’s position that state occupational licensing boards comprised of market participants must satisfy the active supervision requirement. This spurred additional suits against other types of state boards involving regulated professionals. Moreover, every State had to reassess its boards to determine if there is "active supervision." Courts and state legislatures are addressing those issues. We also expect the proper framing of the clear articulation prong of the state action doctrine will be addressed. The Supreme Court spoke to the clear articulation test in FTC v. Phoebe Putney Health System, Inc., 133 S.Ct. 1003 (2013), narrowing the foreseeability test to cover only situations in which the anticompetitive conduct is the “inherent, logical, or ordinary result of the exercise of authority delegated by the state legislature.” How this test has played out in the lower courts will be of particular interest to the Committee and its membership. The COPA issues, at the state level, as previously mentioned, will impact this area.

The Committee expects to address these issues through updates to Connect, newsletters, Spring Meeting programs, committee programs, its contributions to the Annual Review of Antitrust Law Developments. The State Action Practice Manual addresses these issues, as well as the Committee’s Handbook on the Scope of Antitrust Law.

C. Issue #3: Will Noerr Be Restricted or Expanded?

The Noerr-Pennington doctrine is an exemption issue that is frequently litigated. In particular, the most likely area of further development is in the pharma industry. Alleged misrepresentations to government agencies has caught the attention of some courts. In addition, there may be more development on the pattern exception, which raises the issue of whether each act of petitioning in a pattern must satisfy the objectively and subjectively baseless requirements for sham petitioning. The Committee’s new Handbook on Noerr (forthcoming) and its earlier Handbook on the Scope of Antitrust Law addresses developments in the Noerr law.

III. Specific Long Term Plans to Strengthen Committee

The Committee provides important services to the membership of the Section through publications, drafting ABA Antitrust Section comments to proposed regulation and international competition proposed immunities, and programming. The goals of the Committee include: (1) to provide policy comments on key questions about the scope of the antitrust laws for legislation and policy-making; (2) produce a mix of publications and programming that provides relevant and useful information to our members; (3) to ensure that the Committee remains valuable to our members’ practices; and (4) to make the most productive use of electronic communications to deliver the Committee’s work product.

A. Potential Modifications to Charter: What is the Role of this Committee?

The Committee’s current charter accurately characterizes its purview—that is, addressing the scope of the antitrust laws. That scope, of course, is defined primarily in terms of exemptions and immunities (both statutory and non-statutory). The Committee, however, has dealt with other doctrines, such as preemption and primary jurisdiction. These areas may not necessarily be viewed as traditional exemptions or immunities, but they nonetheless directly affect the application and extent of the antitrust laws. In addition, the Committee expends significant efforts to address international issues, including statutory exclusions from the U.S. antitrust laws, including the FTAIA; the related doctrines of act of state, sovereign immunity, and foreign sovereign compulsion; and industry-specific exemptions and exclusions from non-U.S. antitrust laws, including blocking exemptions.

#### Violation --- Patents aren’t immune from antitrust, patents on plants just aren’t considered anticompetitive

**Lim, 13** (Daryl Lim, Assistant Professor, The John Marshall Law School and co-consultant to the AmericanAntitrust Institute (“AAI”) for its Supreme Court brief in Bowman v. Monsanto, 2013, accessed on 9-3-2021, Repository.law.uic, "Self-Replicating Technologies and the Challengefor the Patent and Antitrust Laws, 32 Cardozo Arts& Ent. L.J. 131 (2013)", https://repository.law.uic.edu/cgi/viewcontent.cgi?article=1449&context=facpubs)//Babcii

III. MONSANTO AND THE IP-ANTITRUST INTERFACE Antitrust and patent misuse claims were featured in Monsanto’s earlier suits against farmers and licensees in relation to its Roundup and Roundup Ready technologies, but none were successfully asserted.475 Commentators reflecting on the Bowman v. Monsanto decision wrote that “[b]y holding that Monsanto’s restriction on replanting was within the scope of its patent rights, the Supreme Court effectively immunized that restriction from antitrust scrutiny.”476 **That view**, which found currency with some judges in “pay-for-delay” cases, **was recently dispelled by the Supreme Court in Actavis; the Court clarified that patent owners were not immune from antitrust scrutiny merely because they were acting within the scope of their patent rights**.477 The Court emphasized that an antitrust inquiry into the appropriate scope of patent rights is not defined solely by “the length of the patent’s term or its earning potential[,]” but rather “by considering traditional antitrust factors such as likely **anticompetitive effects**, redeeming virtues, market power, and potentially offsetting legal considerations present in the circumstances[.]”478 Thus, “[w]hether a particular restraint lies ‘beyond the limits of the patent monopoly’ is a conclusion that flows from that analysis and not . . . its starting point.”479 In that analysis, the Court noted that “patent and antitrust policies are both relevant in determining the ‘scope of the patent monopoly’—and consequently antitrust law immunity—that is conferred by a patent.”480 Since patent misuse analysis typically starts with the analysis of patent scope, the doctrine will likely have to be rethought in light of Actavis as well.481

#### Vote NEG---eliminating exemptions and immunities provides a limited AND predictable basis for prep, and focuses debates on the balance between antitrust and regulation, ensuring conceptual unity.

### OFF

#### Our interpretation is that the aff can’t be the courts ---

#### Courts cannot create “antitrust law” and cannot “increase prohibitions”

Kalbfleisch 61 – Kalbfleisch, District Court judge. [Paul M. Harrod Co. v. A. B. Dick Co., 194 F. Supp. 502 (N.D. Ohio 1961)]//babcii

Defendant asserts that the term ‘antitrust laws,’ as used in the above section and as defined in 15 U.S.C.A. § 12, does not include a judgment or decree entered in connection with an antitrust case filed by the Government. Plaintiff, on the other hand, asserts that ‘the violation of the earlier decree of this court in itself gives rise to an independent cause of action under Section 4 of the Clayton Act.’ 15 U.S.C.A. § 15. Plaintiff's Brief, p. 7. Plaintiff concedes that ‘as far as he has been able to ascertain, this contention raises issues which have never before been decided by any appellate court.’ Plaintiff's Brief, p. 5. In Nashville Milk Co. v. Carnation Co., 1958, 355 U.S. 373, 78 S.Ct. 352, 2 L.Ed.2d 340, the Supreme Court held that the Robinson-Patman Act, 15 U.S.C.A. §§ 13-13b, 21a, was not included among the ‘antitrust laws' defined in Section 1 of the Clayton Act (15 U.S.C.A. § 12) and that ‘the definition contained in § 1 of the Clayton Act is exclusive.’ Id., 355 U.S. at page 376, 78 S.Ct. at page 354. The definition of ‘antitrust laws' in 15 U.S.C.A. § 12, clearly embraces only the statutes described therein. Even without such a definition the term ‘antitrust laws' could not be construed as pertaining to a judgment or decree entered by a court in connection with an antitrust case filed by the Government. Such decrees do not necessarily reflect the **prohibitions** of the antitrust laws but may, by their terms, seek to dissipate the effects of the past conduct of the parties and, to this end, frequently enjoin performance of acts lawful in themselves. To permit a private party to recover damages for violation of any provision of such a decree is so obviously beyond the scope of the term ‘antitrust laws,’ as used in the statute, as to require no further discussion. Defendant's motion to dismiss that part of the complaint based on alleged violations of the 1948 consent decree in United States v. A.B. Dick Company will be sustained.

#### Violation – The plan says interpret --- That is solely a function of the courts

White House, ND (White House, No Date, accessed on 11-6-2021, The White House, "The Judicial Branch | The White House", <https://www.whitehouse.gov/about-the-white-house/our-government/the-judicial-branch/>)//babcii

Federal **courts enjoy the sole power to interpret the law**, determine the constitutionality of the law, and apply it to individual cases. The courts, like Congress, can compel the production of evidence and testimony through the use of a subpoena. The inferior courts are constrained by the decisions of the Supreme Court — once **the Supreme Court interprets a law**, inferior courts must apply the Supreme Court’s interpretation to the facts of a particular case.

#### Vote neg for limits and grounds --- Multiplies the # of aff’s by 2, removes any core checks on small aff’s, and allows the aff to circumvent any public backlash

### OFF

#### Topical affs must increase prohibitions on the entire economy:

#### 1---“The” before a noun means whole

Webster’s 5 (Merriam Webster’s Online Dictionary, [http://www.m-w.com/cgi-bin/dictionary](about:blank))

The

4 -- used as a function word before a noun or a substantivized adjective to indicate reference to a group as a whole <the elite>

#### 2---“Private Sector” means all

Senate Manual 11 (Senate Document No. 112-1)//babcii

The term ``private sector'' means all persons or entities in the United States, including individuals, partnerships, associations, corporations, and educational and nonprofit institutions, but shall not include State, local, or tribal governments.112 S. Doc. 1

#### Vote NEG for limits and grounds --- Subsets explodes the topic to thousands of affs, and removes core controversy

### OFF

#### The United States federal government should establish a framework for contingent international cooperation that bans patent control over living organisms

#### The CP’s framework multilateralizes antitrust --- That spills over to deep economic integration

Dr. Daniel Francis 21, Climenko Fellow and Lecturer on Law at Harvard Law School, Doctorate of Laws Degree from the NYU School of Law, Master of Laws Degree from Harvard University, JD from Trinity College at Cambridge University, Former Deputy Director of the Federal Trade Commission, “Choices and Consequences: Internationalizing Competition Policy after TPP”, in Megaregulation Contested: The Global Economic Order After TPP, Ed. Kingsbury, Revised 8/26/2021, p. 40-48

B. Between Contracts and Networks: Frameworks

Another dichotomy that dominates the integration of competition policy pertains to the forms of internationalization, which in the competition policy space have generally been dominated by contract-style treaties on the one hand and by open networks on the other.166 Between these two models lies what seems to be an under-utilized alternative, which I call a “framework for contingent cooperation.” [FOOTNOTE] 166 This binary view dominates the literature. See, e.g., Edward M. Graham, “Internationalizing” Competition Policy: An Assessment of the Two Main Alternatives, 48 Antitrust Bull. 947, 949 (2003) (“[M]echanisms [for antitrust internationalization] range from bilateral treaties creating arrangements for cooperation between or among national competition law enforcement agencies to informal working arrangements among agencies.”); Eleanor M. Fox, International Antitrust and the Doha Dome, 43 Va. J. Int’l L. 911, 912 (2003) (contrasting “horizontalism” with “globalism”); Anu Piilola, Assessing Theories of Global Governance: A Case Study of International Antitrust Regulation, 39 Stan. J. Int'l L. 207, 247 (2003) (“Rather than drafting overarching multilateral agreements on antitrust laws, cooperation efforts in the immediate future are more likely to succeed in managing existing diversity and promoting voluntary convergence based on approximation of domestically applied standards. Networks of antitrust authorities are well-suited to facilitate this process of cooperation and voluntary convergence.”). [END FOOTNOTE] A “framework” in the sense that I am using that term is a facilitative arrangement that does not constitute a treaty under international law,167 and which does not carry the charge of international legal obligation, but which involves an exchange of specific and reciprocally contingent commitments by participant jurisdictions to engage in mutually beneficial conduct. Specifically, each party states that it will extend certain benefits to each other party so long as each other does likewise; the parties may also create supplementary mechanisms to monitor and/or adjudicate compliance with these commitments.168 A framework of this kind is not a treaty: it is what Kal Raustiala calls a “pledge,”169 and what Charles Lipson calls an “informal” agreement,170 involving no legal obligation, and it involves no commitment of the parties’ reputation for law-abiding behavior.171 On the other hand, it differs from an open, information-sharing network because it precisely specifies behavioral commitments, and because each of the parties shares an understanding that concrete consequences will promptly follow—exclusion from the benefits provided by others—if its behavior materially deviates from the terms of the commitment.172 A framework is therefore essentially a specific declaration of intention to engage in conduct that benefits others, contingent upon parallel behavior by other participating states, without obligatory status under international law. This is, in some sense, the direct opposite of the approach typically taken in competition policy chapters in trade agreements. The provisions of competition policy chapters partake of the substance of treaty law, but are generally framed in broad terms rather than specifics, and generally do not reflect a shared understanding that specific consequences will attend breach. By contrast, frameworks do not bind in international law, are framed in specific terms than aspirational generalities, and reflect an understanding that the benefits of cooperation will be withdrawn in the event of violation. Contingent cooperation thus depends for its effectiveness primarily upon three important dynamics. The first and most important of these is the rationality of strategic cooperation. A familiar mainstream view holds that to a significant extent states behave in international society in ways that rationally serve their interests.173 And when cooperation over a series of interactions is overall in the interests of each member of a group, but when each member faces a rational incentive to defect from the terms of cooperation in individual cases, familiar economic theory teaches that a strategic cooperative equilibrium can be maintained among the parties.174 In contingent cooperation, each party understands that if it defects materially from the terms of the framework, the other participants will withdraw the excludable benefits of cooperation, and this provides the incentive to comply.175 Contingent cooperation can be made more stable by the introduction of certain structures designed to monitor compliance (just as with a cartel among private companies).176 This might among other things involve the creation of a central “facilitator” that is responsible, in a general sense, for obtaining, collecting, and processing information necessary to sustain a cooperative equilibrium.177 Depending on the purpose and scope of the cooperation project, this could include (for example): reviewing the text of laws, regulations, and policy documents for consistency with the terms of the framework; conducting peer-review-style evaluations and certifications; hosting voluntary dispute resolution processes, including mediation and/or arbitration, to determine whether and when the framework has been violated; or even receiving and handling complaints of violations ombudsman-fashion (i.e., receiving the complaint, giving the subject of the complaint an opportunity to respond, and publishing findings and conclusions). A central facilitator could also go beyond a policing function and offer a common forum for certain forms of cooperation and information sharing. The nature of such broader functions, and the extent to which they would be useful or desirable, would depend on the nature and purpose of the cooperation. The second dynamic that powers contingent cooperation is the normative appeal of the project itself. The point here is not unlike what Gráinne de Búrca calls “mission legitimacy”: the normative force of the underlying purpose of a cooperative project, and specifically the power of that normativity to secure the acceptance and cooperation of those who participate.178 Parties joining projects of contingent cooperation can be expected to be in some sense self-selecting: they join such endeavors because, in part, they are genuinely committed to promoting and achieving the ends that the project represents, and they embrace the project of cooperation as worthwhile.179 It may sound a little naïve to suggest that a project of cooperation may be more likely to “stick” if it has some normative appeal to the participating polities, but legal scholarship has long recognized that states do what they undertake to do more often than strictly rational analysis would predict.180 And I think the proposition that genuine commitment to a goal can contribute to compliance is in truth somewhat less naïve than the converse idea that compliance is just as likely without it. The third source of a framework’s effectiveness is to be found in the acculturative and socializing effects of interaction in an environment in which values and practices are shared and reinforced as normative, and in which attention is paid to the existence and nature of violations. There is a rich and complex literature on the ways in which states, state actors, and the individuals within them may be “socialized” or “acculturated” by repeated engagement with others through common institutions and shared environments of normativity, eventually contributing to the emergence of obligations with genuine normative force.181 Jutta Brunnée and Stephen Toope have pointed out ways in which the force of legal obligation itself arises from shared communities of practice grounded in social reality and shared understandings, not formal commitments.182 As they put it, “[s]tability may be aided by explicit articulation of a norm in a text, but it is ultimately dependent upon [an] underlying shared understanding and a continuous practice of legality.”183 Participation in an endeavor of contingent cooperation may help to engender the development of such understandings and practices, and these may contribute to the effectiveness of the framework. In the longer term, this may even result in the creation of a legal instrument. But this progression is not necessary for acculturation to exert a reinforcing effect: for, as Anu Bradford accurately notes, there is no reason to think that “the pathway from nonbinding to binding rules” is an inevitable or even a natural one.184 The distinctive value of a framework is that it provides a low-cost way for jurisdictions to explore and participate in possible arrangements of mutual benefit that depend upon shared concrete understandings regarding future behavior, but without bearing the burden of an obligation under international law, without running the reputational risk of having to break a treaty, and without facing the domestic hurdles (or political scrutiny) that a treaty would necessitate.185 Use of such a framework may help to reduce the concerns grounded in political morality that might otherwise attend inter-jurisdictional action in sensitive areas:186 to use a term I have coined elsewhere, as contingent practices from which states could withdraw at any time, frameworks would benefit from considerable resources of “exit legitimacy.”187 Frameworks are not suited to every application. They seem particularly apt for types of international cooperation that generate excludable benefits for other participants and can be reasonably well monitored: in the sphere of competition policy, for example, this would include commitments to provide nondiscriminatory access to procurement markets as well as many forms of antitrust cooperation (including cooperation with one another’s investigations, coordination of enforcement activity, the operation of joint filing systems for merger review and cartel leniency programs, and so on). Certain guarantees of nondiscriminatory treatment by SOEs could also be extended on a selective basis. On the other hand, contingent cooperation is much less suitable for projects that require strong and highly credible guarantees of commitment from the participants (in which case a traditional treaty-contract would seem more appropriate188) or groups of parties still lacking the prerequisite agreement on the terms and ambit of desirable cooperation. Nor is it suitable in the absence of sufficient confidence in the ability or incentive of other parties to deliver on their commitments: in these cases, open dialogue and information exchange through a network would seem preferable. Nor, obviously, is it a good fit for projects in which the benefits of cooperation are non-excludable.189 To pick an obvious example, contingent cooperation would not recommend itself as a natural choice for an international project to introduce SOE discipline: the benefits are non-excludable (there is no obvious way to withdraw them selectively in the event of defection) and compliance is very difficult to monitor, so the use of a framework is unlikely to make much of a contribution.190

#### Normative convergence prevents extinction from resource depletion, human rights abuse, and war

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A. The international political environment At the root of international political theory is the fundamental maxim that relations between sovereign nations in the absence of mitigating factors is characterized by intense competition, mutual distrust, the inability to make credible commitments, and war.20 [FOOTNOTE] 20 Political scientists characterize the international system as “anarchic.” In the absence of world government (or other mitigating force), competition between states is largely unregulated by external laws or enforcement. The world is characterized by mistrust, the inability to contract, and the ultimate reliance on a state’s own devices. See THOMAS HOBBES, LEVIATHAN 80 (Edwin Curley ed., 1994) (in the state of nature “the condition of man . . . is a condition of war of everyone against everyone”). In fuller terms: There is no authoritative allocator of resources: we cannot talk about a ‘world society’ making decisions about economic outcomes. No consistent and enforceable set of comprehensive rules exists. If actors are to improve their welfare through coordinating their policies, they must do so through bargaining rather than by invoking central direction. In world politics, uncertainty is rife, making agreements is difficult, and no secure barriers prevent military and security questions from impinging on economic affairs. ROBERT O. KEOHANE, AFTER HEGEMONY: COOPERATION AND DISCORD IN THE WORLD POLITICAL ECONOMY 18 (1984). Efficiency-enhancing gains from trade are difficult to appropriate because trade itself (and any other form of exchange or agreement between nations) is characterized by the absence of credible commitments to future behavior. And underlying the problem is the ever-present threat of the use of force. See, e.g., Kenneth N. Waltz, Anarchic Orders and Balances of Power, in NEOREALISM AND ITS CRITICS 98, 98 (Robert O. Keohane ed. 1986) (“The state among states . . . conducts its affairs in the brooding shadow of violence . . . . Among states, the state of nature is a state of war.”). Although this dire characterization of the international environment is, of course, a stylized approximation of the real world—there are always overlying constraints on sovereign behavior in the form of norms, reputational effects, and customary international law, HEDLEY BULL, THE ANARCHICAL SOCIETY: A STUDY OF ORDER IN WORLD POLITICS (1977)—it is a useful and widely accepted heuristic for crafting a theory of international politics. [END FOOTNOTE] As one commentator notes, “Nations dwell in perpetual anarchy, for no central authority imposes limits on the pursuit of sovereign interests.”21 And states are “unitary actors who, at a minimum, seek their own preservation and, at a maximum, drive for universal domination.”22 As a result, states operating on the international stage are unable to judge the sincerity of each others’ stated intentions when those intentions are contrary to this manifest interest. Because of self-help rules, states are forced in the main to assess their own security environment by assessing the capabilities of competitors, downplaying their motives. Given that the nature of the competition can implicate the fundamental survival of one (or more) of the actors, actions taken by one state to improve its own security must necessarily decrease the security of its competitor; in the absence of mitigation, security is a zero-sum game.23 In a world where cooperation is exceedingly difficult (because there is no authority to enforce agreements, nor any basis for assessing the reliability of another state’s commitments), international relations are characterized by a continuous race to the bottom, a mindless arms race rather than the opportunity to realize gains from cooperation. It is obvious that not all relations between states are characterized by the security dilemma, however. Canada, for example, shares an unprotected border with the most powerful nation in the world without degenerating into a destructive and costly arms race. By some mechanism, then, Canada must be able reliably to judge U.S. intentions, even absent the apparent ability by the United States credibly to bind itself to a nonaggressive policy toward Canada. The key to mitigating the pressures of the security dilemma is the ability to distinguish a state with aggressive and expansionist tendencies from a benign one.24 States can be distinguished by their fundamental type. They can be classified as “revisionist,” that is, they seek to subvert the dominant order, or they can be classified as “status quo,” that is, they seek to support it.25 But, as noted, a state’s ability to judge another’s intentions (as opposed simply to counting its armaments) is extremely tenuous and comes at great cost. In fact, political science offers few well-understood mechanisms for judging a state’s propensity for aggression. At the same time, hegemonic states have an abiding interest in spreading and maintaining their dominant worldview.26 Not only is it imperative that dominant states receive credible signals about other states’ intentions, but it is also important that dominant states attempt to inculcate their norms within other states that, over time, might mount credible challenges to the dominant states’ security.27 The spread of hegemony through internalization of norms occurs for three reasons. First, states with similar institutions and sympathetic domestic norms are simply better and more reliable trading partners, and it is in the hegemon’s economic interest to instill its norms.28 Second, states with defensive military postures and that adhere to the status quo present significantly less security risk to dominant states.29 And finally, the hegemon has a normative interest in the spread of its culture, its worldview, and its norms.30 This conception of the playing field upon which states interact leads to the conclusion that, entirely apart from the immediate and substantial economic benefits to a state from well-ordered interactions with other states, hegemonic states also have a national security and a normative interest in the information to be gleaned from the fact that these interactions are, in fact, well ordered. In the absence of centralized enforcement, privately held and nonverifiable information as to a state’s fundamental type is the critical problem in assessing motives.31 [FOOTNOTE] 31 See KEOHANE, supra note 20, at 31 (“Order in world politics is typically created by a single dominant power [or hegemon].”). States are consequently classified as one of two types, “revisionist” or “status quo,” based on their acceptance and adherence to the political norms, institutions, and rules created by the hegemon. Status quo states are those that try to improve their condition from within the framework of the accepted world order. Revisionist states, by contrast, seek to gain position both by working outside that order and by working to subvert the hegemonic order itself. For instance, the existing world order is generally accepted to be that created by the United States after World War II. It comprises a liberal international economic order, the use of multilateral institutions (such as the United Nations and the WTO), negotiation for dispute resolution rather than the threat of violence, and the promotion of liberal democratic moral norms. See, e.g., Schweller, supra note 24, at 85; HANS J. MORGENTHAU, POLITICS AMONG NATIONS: THE STRUGGLE FOR POWER AND PEACE 32 (1948). Trade disputes between status quo states (like tariff disputes between the United States and Europe) are resolved through peaceful negotiation rather than the threat of war. Although status quo states do not entirely eschew the use of violence, they typically seek international authorization and legitimization before employing military force, as in the multilateral operations in Iraq, Kosovo, and Afghanistan. Revisionist states, on the other hand, such as North Korea, Iran, and China, will more readily use military force as a bargaining tool and are more reluctant fully to participate in transparent military, economic, and political negotiations. [END FOOTNOTE] States wishing to escape the pressures of the security dilemma and engage in cooperative behavior need a means of conveying their preferences to others in a credible manner. There are, in general, two means by which such information can be transmitted: states can either bind themselves in such a way that they are unable to deviate from a stated behavior (known as “hands tying” in Schelling),32 or they can signal their intention to engage in a specified course of action by incurring costs sufficiently large that they discourage the misrepresentation of preference.33 International institutions can play a crucial role in facilitating the transmission of this information.34 In particular, international agreements over the terms of trade, even without binding supranational enforcement authority, provide a means for states to bind themselves to a desirable course of behavior in the short run and, more importantly, to signal their acquiescence to the ruling world order in the long run. Because compliance with treaty obligations often requires signatories to alter their domestic laws to reflect the terms of the treaty, the costs of compliance can be substantial. In the short run, to the extent that states enforce their domestic laws they can bind themselves to a certain course of behavior. In the long run, a state’s willingness to incur the substantial costs of changing its laws, both the transaction costs inherent in changing domestic laws and the even more substantial costs in domestic political capital, signals a willingness to engage other states on the terms set by the reigning international power. Moreover, there may be unintended effects, as changes in domestic laws result in a new set of domestic incentives to which actors respond, and new windows of opportunity may open up through which policy entrepreneurs can push for the internalization of new norms.35 Competition laws in particular are susceptible to this mode of analysis. Most nations have adopted competition laws as a way to actualize (as well as to symbolize) a degree of commitment to the competitive process and to the prevention of abusive business practices . . . . The introduction of competition laws and policies has also gone hand in hand with economic deregulation, regulatory reform, and the end of command and control economies.36 The surest way to remove the threat of war, increase wealth, conserve resources, and protect human rights is through fundamental agreement between all states (or at least effective agreement between verifiably status quo states) under a normative umbrella that promotes all of those values. This normative convergence can be effected through the stepwise internalization of the sorts of economic and democratic values inherent in international economic liberalization, perhaps most notably through the adoption of principled international antitrust standards.37

### OFF

#### The United States federal government should interpret any patent control over seeds or plants as illegal per se

#### Xenobots are coming --- That solves toxic waste, cancer and propel nanobots

Coghlan, 20 (Simon Coghlan, Simon is a moral philosopher and a veterinarian. He is a senior research fellow in the Centre for AI and Digital Ethics (CAIDE) and the School of Computing and Information Systems (CIS)., 1-20-2020, accessed on 11-6-2021, Phys, "Not bot, not beast: Scientists create first ever living, programmable organism", <https://phys.org/news/2020-01-bot-beast-scientists-programmable.html)//Babcii>

A remarkable combination of artificial intelligence (AI) and biology has produced the world's first "**living robots**". This week, a research team of roboticists and scientists [published](https://www.pnas.org/content/early/2020/01/07/1910837117) their recipe for making a new lifeform **called xenobots** from [stem cells](https://phys.org/tags/stem+cells/). The term "xeno" comes from the frog cells (Xenopus laevis) used to make them. One of the researchers [described the creation](https://www.forbes.com/sites/simonchandler/2020/01/14/worlds-first-living-robot-invites-new-opportunities-and-risks/#379ef46c3caf) as "neither a traditional robot nor a known species of animal", but a "new class of artifact: a living, programmable organism". Xenobots are **less than 1mm long** and made of 500-1000 living cells. They have various simple shapes, including some with squat "legs". They can propel themselves in linear or circular directions, join together to act collectively, and move small objects. Using their own cellular energy, they can live up to 10 days. While these "reconfigurable biomachines" could vastly improve human, animal, and environmental health, they raise legal and ethical concerns. Strange new 'creature' To make xenobots, the research team used a supercomputer to test thousands of random designs of simple living things that could perform certain tasks. The computer was programmed with an AI "evolutionary algorithm" to predict which organisms would likely display useful tasks, such as moving towards a target. After the selection of the most promising designs, the scientists attempted to replicate the virtual models with frog skin or heart cells, which were manually joined using microsurgery tools. The heart cells in these bespoke assemblies contract and relax, giving the organisms motion. The creation of xenobots is groundbreaking. Despite being described as "programmable living robots", they are actually completely organic and **made of living tissue**. The term "robot" has been used because xenobots can be configured into different forms and shapes, and "programmed" to target certain objects—which they then unwittingly seek. They can also repair themselves after being damaged. Possible applications Xenobots may have great value. [Some speculate](https://www.technologyreview.com/f/615041/these-xenobots-are-living-machines-designed-by-an-evolutionary-algorithm/) **they could be used to clean our polluted oceans** by collecting microplastics. Similarly, they may be used to **enter confined or dangerous areas to scavenge toxins or radioactive materials**. Xenobots designed with carefully shaped "pouches" might be able to carry drugs into human bodies. Future versions may be built from a patient's own cells to repair tissue or target cancers. Being biodegradable, xenobots would have an edge on technologies made of plastic or metal. Further development of biological "robots" could accelerate our understanding of living and robotic systems. Life is incredibly complex, so manipulating living things could reveal some of life's mysteries—and improve our use of AI. Legal and ethical questions Conversely, xenobots raise legal and ethical concerns. In the same way they could help target cancers, they could also be used to hijack life functions for malevolent purposes. Some argue artificially making living things is unnatural, hubristic, or involves "playing God". A more compelling concern is that of unintended or malicious use, as we have seen with technologies in fields including nuclear physics, chemistry, biology and AI. For instance, xenobots might be used for hostile biological purposes prohibited under international law. More advanced future xenobots, especially ones that live longer and reproduce, could potentially "malfunction" and go rogue, and out-compete other species. For [complex tasks](https://phys.org/tags/complex+tasks/), xenobots may need sensory and nervous systems, possibly resulting in their sentience. A sentient programmed organism would raise additional ethical questions. Last year, the revival of a disembodied pig brain [elicited concerns about different species' suffering](https://www.nature.com/articles/d41586-019-01216-4). Managing risks The xenobot's creators have rightly acknowledged the need for discussion around the ethics of their creation. The 2018 scandal over using CRISPR (which allows the introduction of genes into an organism) may provide an instructive lesson [here](https://www.technologyreview.com/s/614761/nature-jama-rejected-he-jiankui-crispr-baby-lulu-nana-paper/). While the experiment's goal was to reduce the susceptibility of twin baby girls to HIV-AIDS, associated risks caused ethical dismay. The scientist in question [is in prison](https://www.theguardian.com/world/2019/dec/30/gene-editing-chinese-scientist-he-jiankui-jailed-three-years). When CRISPR became widely available, some experts called for a [moratorium](https://www.theguardian.com/science/2019/mar/13/scientists-call-for-global-moratorium-on-crispr-gene-editing) on heritable genome editing. Others [argued](https://www.liebertpub.com/doi/10.1089/crispr.2019.0016?utm_source=miragenews&utm_medium=miragenews&utm_campaign=news&) the benefits outweighed the risks. While each new technology should be considered impartially and based on its merits, giving life to xenobots raises certain significant questions: Should xenobots have biological kill-switches in case they go rogue? Who should decide who can access and control them? What if "homemade" xenobots become possible? Should there be a moratorium until regulatory frameworks are established? How much regulation is required? Lessons learned in the past from advances in other areas of science could help manage future risks, while reaping the possible benefits. Long road here, long road ahead The creation of **xenobots had various biological and robotic precedents**. Genetic engineering has created genetically modified mice that become [fluorescent](http://www.understandinganimalresearch.org.uk/news/research-medical-benefits/glowing-mice/) in UV light. [Designer microbes](https://advances.sciencemag.org/content/1/4/e1500077) can produce drugs and food ingredients that may eventually [replace animal agriculture](https://solarfoods.fi/). In 2012, scientists created an [artificial jellyfish](https://blogs.scientificamerican.com/brainwaves/what-would-it-take-to-really-build-an-artificial-jellyfish) called a "medusoid" from rat cells. Robotics is also flourishing. Nanobots can [monitor people's blood sugar levels](http://news.mit.edu/2013/nanotechnology-could-help-fight-diabetes-0516) and may eventually be able to [clear clogged arteries](https://www.smithsonianmag.com/innovation/tiny-robots-can-clear-clogged-arteries-180955774/). **Robots can incorporate living matter**, which we witnessed when engineers and biologists created a [sting-ray robot](https://www.sciencemag.org/news/2016/07/robotic-stingray-powered-light-activated-muscle-cells) powered by light-activated [cells](https://phys.org/tags/cells/). In the coming years, we are sure to see more creations like xenobots that evoke both wonder and due concern. And when we do, it is important we remain both open-minded and critical.

#### Patent protections are key

**Dabney, 13** (James Dabney, Jan-23-2013, accessed on 10-29-2021, Chamberlitigation, "BRIEF FOR AGILENT TECHNOLOGIES, INC., ILLUMINA, INC., LIFE TECHNOLOGIES CORP., PROMEGA CORP., QIAGEN N.V., AND ROCHE MOLECULAR SYSTEMS, INC. AS. AMICI CURIAE IN SUPPORT OF RESPONDENTS,", https://www.chamberlitigation.com/sites/default/files/scotus/files/Agilent%20Technologies%20amicus%20brief%20-%20Bowman%20v.%20Monsanto%20Co.%20%28U.S.%20Supreme%20Court%29.pdf)//Babcii

Uses of biomedical technologies are often subject to restrictions in patent license agreements that limit licensees to uses in specific fields and allow other licensees the right to use in other fields. Patent right divisibility and party autonomy in contracting **help licensees navigate this often complex field of patent rights use restrictions.** When a licensee develops and sells a new product that comprises amici’s patented technology, conditional sale and license terms provide a mechanism that enables the licensee to comply with field of use and other restrictions in its contracts for the sale of products embodying amicis patented inventions. Without the ability to make selective waivers of **patent rights**, **the biomedical technology transfer system would be severely disrupted and thousands upon thousands of existing licenses would be undermined**. Divisibility of patent rights and party autonomy in contracting **are also critical to the commercialization of patents** disclosing readily replicable technologies. Many research tools are replicable, such as **cell lines and DNA vectors**. If a patentee could not retain certain **use and resale rights** when selling products embodying novel replicable technologies, a customer could buy a product once and **then easily replicate and resell** it an indefinite number of times, in either identical or modified form. **This would severely disrupt the network of limited use patent licenses for the technology, force higher prices, and deprive the Industry of incentives for developing and selling replicable research tools.**

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#### The United States Patent and Trademark Office should

#### - Create an internal memorandum that any future patent over living organisms should be refused

#### - Create an internal memorandum that any current patent over living organisms should not be renewed

#### - Announce the aforementioned planks publicly and create binding enforcement mechanisms for said planks

#### That solves the aff without using antitrust --- It stops the issuing of the patent before it can even become anti-competitive

Lemley ’7 [Mark; January; Law Professor at Stanford University; Boston College Law Review, “Ten Things to Do About Patent Holdup of Standards (And One Not To),” Vol. 47]

C. Antitrust Law Can't Solve the Holdup Problem

Note what is not on this list: antitrust law. I have made ten more or less radical proposals for doing something about patent holdup, and not one of them mentions antitrust, except to say antitrust law should get out of the way of SSOs. That's not an accident. I think antitrust law serves a valuable purpose, but where the holdup problem is concerned, it is a backstop. In this particular circumstance, it's a backstop that's going to apply only if private efforts in SSOs and IP law have already failed us.

Even then, it is not clear that antitrust law is up to the task of policing patent holdup. 88 Courts may be reluctant to second-guess what they see as the judgment of patent law to give certain rights to patent owners. 89 Certainly, some courts have shown undue deference to patents even in circumstances that more clearly violate the antitrust laws. 90 Further, proving an antitrust violation requires detailed evidence [\*168] of both causation and intent, something that may be difficult even when, as a policy matter, a patentee should not be permitted to extend its rights. 91 We have yet to see a successful contested prosecution of standard-setting abuse. 92 Antitrust law can play a role here in extreme cases, such as in In re Ramous, Inc. 93 But if we design the patent law and the SSO rules correctly, those cases should not arise.

CONCLUSION

Patents provide needed incentives. But in certain circumstances, they can give a patentee too much power to restrict an integrated product on the basis of a patent covering a minor component of that product. That fact, coupled with unscrupulous behavior of some patentees, creates serious problems in the IT industry in general and SSOs in particular. Patent law should seek to realign incentives so that the value any given patentee can capture bears a reasonable relationship to the contribution its invention makes. SSOs should be diligent in finding out what patents exist and what it will cost to license them. And antitrust law should facilitate rather than interfere with this process. If we can accomplish these changes, we can ensure that patent law serves its proper role in encouraging rather than stifling innovation.

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#### FTC’s increasing enforcement in privacy now---it’s focused on algorithmic bias.

James V. Fazio 21. Special counsel in the Intellectual Property Practice Group at Sheppard, Mullin, Richter & Hampton LLP, with Liisa M. Thomas, 3/11. “What Is FTC’s Course Under Biden?” https://www.natlawreview.com/article/what-ftc-s-course-under-biden

The new acting FTC chair, Rebecca Kelly Slaughter, recently signaled that the FTC may increase enforcement and penalties in the privacy and data security realm. Slaughter pointed to several areas of focus for the FTC this year, which companies will want to keep in mind: Notifying Consumers About FTC Allegations: Slaughter referred favorably to two recent cases: (1) the Everalbum biometric settlement from earlier this year (which we wrote about at the time); and (2) the Flo Health settlement over alleged deceptive data sharing practices (which we also wrote about at the time). In drawing on these two cases, Slaughter indicated that in future cases the FTC intends to include as part of any settlement a requirement to notify customers of any FTC allegations. This, she said, would allow consumers to “vote with their feet” and help them decide whether to recommend their services to others. FTC Intent to Plead All Relevant Violations: According to Slaughter, another lesson the FTC is taking from the Flo case is to include in the cases it brings all potentially applicable violations of all relevant privacy-related laws. In the Flo case, Slaughter said the FTC should have pleaded a violation of the Health Breach Notification Rule, which requires that vendors of personal health records notify consumers of data breaches. Focus on Ed Tech and COPPA: Given the explosive growth of education technology during COVID-19, the FTC is conducting an industry sweep of the industry. Related to this, the FTC is reviewing its Children’s Online Privacy Protection Act Rule. This goes beyond the refresh the agency did of their FAQs earlier in the pandemic (which we wrote about at the time). For now, Slaughter reminds companies that parental consent is needed before collecting information online from children under the age of 13. Examination of Health Apps: The FTC will take a closer look at health apps, including telehealth and contact tracing apps, as more and more consumers are relying on such apps to manage their health during the pandemic. Overlap Between Competition and Privacy: Slaughter also indicated that it is worth looking at situations where there may be not only privacy concerns, but antitrust as well. Because the FTC has a dual mission (consumer protection and competition) she notes that it has a “structural advantage” over other regulators in that it can look at these issues, especially since -she states- “many of the largest players in digital markets are as powerful as they are because of the breadth of their access to and control over consumer data.” Racial Equality and AI/Biometrics/Geotracking: Slaughter noted that COVID-19 is exacerbating racial inequities. She pointed to the unequal access to technology, as well as algorithmic discrimination (the idea that discrimination offline becomes embedded into algorithmic system logic). The FTC intends to focus on algorithmic discrimination, as well as on the discrimination potentially embedded into facial recognition technologies. (This mirrors concerns that gave rise to the recent Portland facial recognition law, which we recently wrote about). Finally, Slaughter commented on the use of location data to identify characteristics of Black Lives Matter protesters, and said she is concerned about the misuse of location data to track Americans engaged in constitutionally protected speech. Putting it Into Practice: Companies that operate health apps, that are in the education technology space, or that use algorithms or facial recognition tools will want to keep in mind that these are areas of focus for the FTC. And for everyone, keep in mind that the FTC has indicated it will beef up privacy law penalties and will ask for more notification to injured consumers.

**Antitrust enforcement saps up FTC resources and personnel, which are finite**

Tara L. **Reinhart, et al. 21**. \*\*Head of Skadden, Arps, Slate, Meagher & Flom LLP’s Antitrust/Competition Group. \*\*Steven C. Sunshine, Co-head of Skadden, Arps, Slat, Meagher & Flom LLP’s Antitrust/Competition Group. \*\*David P. Whales, antitrust lawyer with over 25 years of experience in both private and public sectors. \*\*Julia Y. York, partner at Skadden, Arps, Slat, Meagher & Flom LLP. \*\*Bre Jordan, associate at Skadden, Arps, Slat, Meagher & Flom LLP focusing on antitrust law. “Lina Khan’s Appointment as FTC Chair Reflects Biden Administration’s Aggressive Stance on Antitrust Enforcement.” 6/18/21. https://www.skadden.com/insights/publications/2021/06/lina-khans-appointment-as-ftc-chair

Second, like all antitrust enforcers, Ms. Khan and the FTC will face resource constraints. Bringing **antitrust litigation is an expensive and laborious process**, often requiring millions of dollars for expert fees and a large army of FTC staff attorneys and taking many months or even years to accomplish. Typically, the FTC can only litigate a **handful of antitrust matters** at a time. It seems likely that Congress will provide more funding to the FTC in the current environment, but even with these extra resources, the **FTC will still have to pick its cases carefully** and cannot challenge every deal or every instance of alleged unlawful conduct.

#### That trades off with the necessary resources for privacy enforcement.

John O. McGinnis\* and Linda Sun\*\* 20. \*George C. Dix Professor, Northwestern University, and Associate-Designate, Wilmer Pickering Hale & Dorr LLP. “Unifying Antitrust Enforcement for the Digital Age.” Northwestern Public Law Research Paper No. 20-20. https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3669087

The FTC needs more resources to adequately address the nation’s growing privacy concerns. Currently, the FTC oversees both consumer protection—encompassing privacy—and antitrust,249 making the FTC the chief federal agency on privacy policy and enforcement250 and the nation’s de-facto privacy agency.251 The agency has long-standing experience in enforcing privacy statutes252 and also has special privacy assets, such as an internet lab capable of high-quality tech forensics to track invasions of privacy.253 The FTC, however, has failed to keep pace with the massive growth of privacy concerns—a phenomenon also driven by modern technology. Very few Americans feel conﬁdent in the privacy of their information in the digital age.254 According to a 2019 study, over 80% of Americans feel that they have little to no control over the data collected on them by companies and the government.255 To adequately address privacy concerns, the FTC needs more resources.256 The agency has been explicit that it needs more manpower to police tech companies. In requesting increased funding from Congress, FTC Director Joseph Simons said the money would allow the agency to hire additional staff and bring more privacy cases.257 A former director of the FTC’s Bureau of Consumer Protection, which houses the privacy unit, has called the FTC “woefully understaffed.”258 As of the spring of 2019, the FTC had only forty employees dedicated to privacy and data security, compared to 500 and 110 employees at comparable agencies in the UK. and Ireland, respectively.259 Without more lawyers, investigators, and technologists, the FTC will be forced to conduct privacy investigations less thoroughly, and in some cases, forgo them altogether.260 Currently, the FT C’s resources are spread thin across multiple missions, to the detriment of its privacy efforts. Removing the agency’s antitrust responsibilities would reallocate resources from the antitrust department to its privacy unit and other areas of consumer protection. Further, it would free up the scarce time of the commissioners to oversee this essential effort.261

#### Unchecked algorithmic bias risks massive inequality and extinction.

Mike Thomas 20. Quoting AI experts including MIT Physics Professors, Senior Features Writer for BuiltIn. THE FUTURE OF ARTIFICIAL INTELLIGENCE: 7 ways AI can change the world for better ... or worse, Updated: April 20, 2020, <https://builtin.com/artificial-intelligence/artificial-intelligence-future>

Klabjan also puts little stock in extreme scenarios — the type involving, say, murderous cyborgs that turn the earth into a smoldering hellscape. He’s much more concerned with machines — war robots, for instance — being fed faulty “incentives” by nefarious humans. As MIT physics professors and leading AI researcher Max Tegmark put it in a 2018 TED Talk, “The real threat from AI isn’t malice, like in silly Hollywood movies, but competence — AI accomplishing goals that just aren’t aligned with ours.” That’s Laird’s take, too. “I definitely don’t see the scenario where something wakes up and decides it wants to take over the world,” he says. “I think that’s science fiction and not the way it’s going to play out.” What Laird worries most about isn’t evil AI, per se, but “evil humans using AI as a sort of false force multiplier” for things like bank robbery and credit card fraud, among many other crimes. And so, while he’s often frustrated with the pace of progress, AI’s slow burn may actually be a blessing. “Time to understand what we’re creating and how we’re going to incorporate it into society,” Laird says, “might be exactly what we need.” But no one knows for sure. “There are several major breakthroughs that have to occur, and those could come very quickly,” Russell said during his Westminster talk. Referencing the rapid transformational effect of nuclear fission (atom splitting) by British physicist Ernest Rutherford in 1917, he added, “It’s very, very hard to predict when these conceptual breakthroughs are going to happen.” But whenever they do, if they do, he emphasized the importance of preparation. That means starting or continuing discussions about the ethical use of A.G.I. and whether it should be regulated. That means working to eliminate data bias, which has a corrupting effect on algorithms and is currently a fat fly in the AI ointment. That means working to invent and augment security measures capable of keeping the technology in check. And it means having the humility to realize that just because we can doesn’t mean we should. “Our situation with technology is complicated, but the big picture is rather simple,” Tegmark said during his TED Talk. “Most AGI researchers expect AGI within decades, and if we just bumble into this unprepared, it will probably be the biggest mistake in human history. It could enable brutal global dictatorship with unprecedented inequality, surveillance, suffering and maybe even human extinction. But if we steer carefully, we could end up in a fantastic future where everybody’s better off—the poor are richer, the rich are richer, everybody’s healthy and free to live out their dreams.”

## Case

### 1NC --- Case

#### Extinction first --- Living is a pre-req for any other issue, magnitude is nearly infinite, and future gains in quality of life ensure it’s a prior question

Todd 17 [Ben has a 1st from Oxford in Physics and Philosophy, has published in Climate Physics, once kick-boxed for Oxford, and speaks Chinese, badly. "The case for reducing extinction risk." https://80000hours.org/articles/extinction-risk/]

In this new age, what should be our biggest priority as a civilisation? Improving technology? Helping the poor? Changing the political system? Here’s a suggestion that’s not so often discussed: our first priority should be to survive. So long as civilisation continues to exist, we’ll have the chance to solve all our other problems, and have a far better future. But if we go extinct, that’s it. Why isn’t this priority more discussed? Here’s one reason: many people don’t yet appreciate the change in situation, and so don’t think our future is at risk. Social science researcher Spencer Greenberg surveyed Americans on their estimate of the chances of human extinction within 50 years. The results found that many think the chances are extremely low, with over 30% guessing they’re under one in ten million.2 We used to think the risks were extremely low as well, but when we looked into it, we changed our minds. As we’ll see, researchers who study these issues think the risks are over one thousand times higher, and are probably increasing. These concerns have started a new movement working to safeguard civilisation, which has been joined by Stephen Hawking, Elon Musk, and new institutes founded by researchers at Cambridge, MIT, Oxford, and elsewhere. In the rest of this article, we cover the greatest risks to civilisation, including some that might be bigger than nuclear war and climate change. We then make the case that reducing these risks could be the most important thing you do with your life, and explain exactly what you can do to help. If you would like to use your career to work on these issues, we can also give one-on-one support. How likely are you to be killed by an asteroid? An overview of naturally occurring extinction risks An overview of naturally occurring extinction risks A one in ten million chance of extinction in the next 50 years — what many people think the risk is — must be an underestimate. Naturally occurring extinction risks can be estimated pretty accurately from history, and are much higher. If Earth was hit by a 1km-wide asteroid, there’s a chance that civilisation would be destroyed. By looking at the historical record, and tracking the objects in the sky, astronomers can estimate the risk of an asteroid this size hitting Earth as about 1 in 5000 per century.3 That’s higher than most people’s chances of being in a plane crash (about one in five million per flight), and already about 1000-times higher than the one in ten million risk that some people estimated.4 Some argue that although a 1km-sized object would be a disaster, it wouldn’t be enough to cause extinction, so this is a high estimate of the risk. But on the other hand, there are other naturally occurring risks, such as supervolcanoes.5 All this said, natural risks are still quite small in absolute terms. An upcoming paper by Dr. Toby Ord estimated that if we sum all the natural risks together, they’re very unlikely to add up to more than a 1 in 300 chance of extinction per century.6 Unfortunately, as we’ll now show, the natural risks are dwarfed by the human-caused ones. And this is why the risk of extinction has become an especially urgent issue. A history of progress, leading to the start of the most dangerous epoch in human history If you look at history over millennia, the basic message is that for a long-time almost everyone was poor, and then in the 18th century, that changed.7

Chart, line chart

Description automatically generated

This was caused by the industrial revolution — perhaps the most important event in history. It wasn’t just wealth that grew. The following chart shows that over the long-term, life expectancy, energy use and democracy have all grown rapidly, while the percentage living in poverty has dramatically decreased.8

Timeline

Description automatically generated

Literacy and education levels have also dramatically increased:

Chart

Description automatically generated

**People** also seem to become happier as they get wealthier. In The Better Angels of Our Nature, Steven Pinker argues that violence is going down.9 Individual freedom has increased, while racism, sexism and homophobia have decreased. Many people think the world is getting worse,10 and it’s true that modern civilisation does some terrible things, such as factory farming. But as you can see in the data, many important measures of progress have improved dramatically. More to the point, no matter what you think has happened in the past, if we look forward, improving technology, political organisation and freedom gives **our descendant**s the **potential to solve our current problems**, and have vastly better lives.11 It is possible to end poverty, prevent climate change, alleviate suffering, and more. But also notice the purple line on the second chart: war-making capacity. It’s based on estimates of global military power by the historian Ian Morris, and it has also increased dramatically. Here’s the issue: improving technology holds the possibility of enormous gains, but also enormous risks. Each time we discover a new technology, most of the time it yields huge benefits. But there’s also a chance we discover a technology with more destructive power than we have the ability to wisely use. And so, although the present generation lives in the most prosperous period in human history, it’s plausibly also the most dangerous. The first destructive technology of this kind was nuclear weapons. Nuclear weapons: a history of near-misses Today we all have North Korea’s nuclear programme on our minds, but current events are just one chapter in a long saga of near misses. We came near to nuclear war several times during the Cuban Missile crisis alone.12 In one incident, the Americans resolved that if one of their spy planes were shot down, they would immediately invade Cuba without a further War Council meeting. The next day, a spy plane was shot down. JFK called the council anyway, and decided against invading. An invasion of Cuba might well have triggered nuclear war; it later emerged that Castro was in favour of nuclear retaliation even if “it would’ve led to the complete annihilation of Cuba”. Some of the launch commanders in Cuba also had independent authority to target American forces with tactical nuclear weapons in the event of an invasion. In another incident, a Russian nuclear submarine was trying to smuggle materials into Cuba when they were discovered by the American fleet. The fleet began to drop dummy depth charges to force the submarine to surface. The Russian captain thought they were real depth charges and that, while out of radio communication, the third world war had started. He ordered a nuclear strike on the American fleet with one of their nuclear torpedoes. Fortunately, he needed the approval of other senior officers. One, Vasili Arkhipov, disagreed, preventing war. Putting all these events together, JFK later estimated that the chances of nuclear war were “between one in three and even”.13 There have been plenty of other close calls with Russia, even after the Cold War, as listed on this nice Wikipedia page. And those are just the ones we know about. Nuclear experts today are just as concerned about tensions between India and Pakistan, which both possess nuclear weapons, as North Korea.14 The key problem is that several countries maintain large nuclear arsenals that are ready to be deployed in minutes. This means that a false alarm or accident can rapidly escalate into a full-blown nuclear war, especially in times of tense foreign relations. Would a nuclear war end civilisation? It was initially thought that a nuclear blast might be so hot that it would ignite the atmosphere and make the Earth uninhabitable. Scientists estimated this was sufficiently unlikely that the weapons could be “safely” tested, and we now know this won’t happen. In the 1980s, the concern was that ash from burning buildings would plunge the Earth into a long-term winter that would make it impossible to grow crops for decades.15 Modern climate models suggest that a nuclear winter severe enough to kill everyone is very unlikely, though it’s hard to be confident due to model uncertainty.16 Even a “mild” nuclear winter, however, could still cause mass starvation.17 For this and other reasons, a nuclear war would be extremely destabilising, and it’s unclear whether civilisation could recover. How likely is a nuclear war to permanently end civilisation? It’s very hard to estimate, but it seems hard to conclude that the chance of a civilisation-ending nuclear war in the next century isn’t over 0.3%. That would mean the risks from nuclear weapons are greater than all the natural risks put together. (Read more about nuclear risks.) This is why the 1950s marked the start of a new age for humanity. For the first time in history, it became possible for a small number of decision-makers to wreak havoc on the whole world. We now pose the greatest threat to our own survival — that makes today the most dangerous point in human history. And nuclear weapons aren’t the only way we could end civilisation. How big is the risk of run-away climate change? In 2015, President Obama said in his State of the Union address that:18 “No challenge  poses a greater threat to future generations than climate change” Climate change is certainly a major risk to civilisation. The graph below shows estimates of climate sensitivity. Climate sensitivity is how much warming to expect in the long-term if CO2 concentrations double, which is roughly what’s expected within the century. The most likely outcome is 2-4 degrees of warming, which would be bad, but survivable. However, these estimates give a 10% chance of warming over 6 degrees, and perhaps a 1% chance of warming of 9 degrees. That would render large fractions of the Earth functionally uninhabitable, requiring at least a massive reorganisation of society. It would also probably increase conflict, and make us more vulnerable to other risks. (If you’re sceptical of climate models, then you should increase your uncertainty, which makes the situation more worrying.) So, it seems like the chance of a massive climate disaster created by CO2 is perhaps similar to the chance of a nuclear war. Researchers who study these issues think nuclear war seems more likely to result in outright extinction, due to the possibility of nuclear winter, which is why we think nuclear weapons pose an even greater risk than climate change. That said, climate change is certainly a major problem, which should raise our estimate of the risks even higher. (Read more about run-away climate change.) What new technologies might be as dangerous as nuclear weapons? The invention of nuclear weapons led to the anti-nuclear movement just a decade later in the 1960s, and the environmentalist movement soon adopted the cause of fighting climate change. What’s less appreciated is that new technologies will present further catastrophic risks. This is why we need a movement that is concerned with safeguarding civilisation in general. Predicting the future of technology is difficult, but because we only have one civilisation, we need to try our best. Here are some candidates for the next technology that’s as dangerous as nuclear weapons. In 1918-1919, over 3% of the world’s population died of the Spanish Flu.19 If such a pandemic arose today, it might be even harder to contain due to rapid global transport. What’s more concerning, though, is that it may soon be possible to genetically engineer a virus that’s as contagious as the Spanish Flu, but also deadlier, and which could spread for years undetected. That would be a weapon with the destructive power of nuclear weapons, but far harder to prevent from being used. Nuclear weapons require huge factories and rare materials to make, which makes them relatively easy to control. Designer viruses might be possible to create in a lab with a couple of biology PhDs. In fact, in 2006, The Guardian was able to order segments of the extinct smallpox virus by mail order.20 Some terrorist groups have expressed interest in using indiscriminate weapons like these. (Read more about pandemic risks.) Another new technology with huge potential power is artificial intelligence. The reason that humans are in charge and not chimps is purely a matter of intelligence. Our large and powerful brains give us incredible control of the world, despite the fact that we are so much physically weaker than chimpanzees. So then what would happen if one day we created something much more intelligent than ourselves? In 2017, 350 researchers who have published peer-reviewed research into artificial intelligence at top conferences were polled about when they believe that we will develop computers with human-level intelligence: that is, a machine that is capable of carrying out all work tasks better than humans. The median estimate was that there is a 50% chance we will develop high-level machine intelligence in 45 years, and 75% by the end of the century.21 These probabilities are hard to estimate, and the researchers gave very different figures depending on precisely how you ask the question.22 Nevertheless, it seems there is at least a reasonable chance that some kind of transformative machine intelligence is invented in the next century. Moreover, greater uncertainty means means that it might come sooner than people think rather than later. What risks might this development pose? The original pioneers in computing, like Alan Turing and Marvin Minsky, raised concerns about the risks of powerful computer systems,23 and these risks are still around today. We’re not talking about computers “turning evil”. Rather, one concern is that a powerful AI system could be used by one group to gain control of the world, or otherwise be mis-used. If the USSR had developed nuclear weapons 10 years before the USA, the USSR might have become the dominant global power. Powerful computer technology might pose similar risks. Another concern is that deploying the system could have unintended consequences, since it would be difficult to predict what something smarter than us would do. A sufficiently powerful system might also be difficult to control, and so be hard to reverse once implemented. These concerns have been documented by Oxford Professor Nick Bostrom in Superintelligence and by AI pioneer Stuart Russell. Most experts think that better AI will be a hugely positive development, but they also agree there are risks. In the survey we just mentioned, AI experts estimated that the development of high-level machine intelligence has a 10% chance of a “bad outcome” and a 5% chance of an “extremely bad” outcome, such as human extinction.21 And we should probably expect this group to be positively biased, since, after all, they make their living from the technology. Putting the estimates together, if there’s a 75% chance that high-level machine intelligence is developed in the next century, then this means that the chance of a major AI disaster is 5% of 75%, which is about 4%. (Read more about risks from artificial intelligence.) People have raised concern about other new technologies, such as other forms of geo-engineering and atomic manufacturing, but they seem significantly less imminent, so are widely seen as less dangerous than the other technologies we’ve covered. You can see a longer list of extinction risks here. What’s probably more concerning is the risks we haven’t thought of yet. If you had asked people in 1900 what the greatest risks to civilisation were, they probably wouldn’t have suggested nuclear weapons, genetic engineering or artificial intelligence, since none of these were yet invented. It’s possible we’re in the same situation looking forward to the next century. Future “unknown unknowns” might pose a greater risk than the risks we know today. Each time we discover a new technology, it’s a little like betting against a single number on a roulette wheel. Most of the time we win, and the technology is overall good. But each time there’s also a small chance the technology gives us more destructive power than we can handle, and we lose everything. If we add everything together, what’s the total risk? Many experts who study these issues estimate that the total chance of human extinction in the next century is between 1 and 20%. For instance, an informal poll in 2008 at a conference on catastrophic risks found they believe it’s pretty likely we’ll face a catastrophe that kills over a billion people, and estimate a 19% chance of extinction before 2100.24

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| --- | --- | --- |
| Risk | At least 1 billion T dead | Human  extinction T |
| Number killed by molecular nanotech weapons. | 10% | 5% |
| Total killed by superintelligent Al. | 5% | 5% |
| Total killed in all wars (including civil wars). | 30% | 4% |
| Number killed in the single biggest engineered pandemic. | 10% | 2% |
| Total killed in all nuclear wars. | 10% | 1% |
| Number killed in the single biggest nanotech accident. | 1% | 0.5% |
| Number killed in the single biggest natural pandemic. | 5% | 0.05% |
| Total killed in all acts of nuclear terrorism. | 1% | 0.03% |
| Overall risk of extinction prior to 2100 | n/a | 19% |

Dr. Toby Ord, who is writing a book on this topic, puts the risk in the next century at 1 in 6 — the roll of a dice. These figures are about one million times higher than what people normally think. What should we make of these estimates? Presumably, the researchers only work on these issues because they think they’re so important, so we should expect their estimates to be high (“selection bias”). But does that mean we can dismiss their concerns entirely? Given this, what’s our personal best guess? It’s very hard to say, but we find it hard to confidently ignore the risks. Overall, we think the risk is likely over 3%. Why helping to safeguard the future could be the most important thing you can do with your life How much should we prioritise working to reduce these risks compared to other issues, like global poverty, ending cancer or political change? At 80,000 Hours, we do research to help people find careers with positive social impact. As part of this, we try to find the most urgent problems in the world to work on. We evaluate different global problems using our problem framework, which compares problems in terms of: Scale – how many are affected by the problem Neglectedness -how many people are working on it already Solvability – how easy it is to make progress If you apply this framework, we think that safeguarding the future comes out as the world’s biggest priority. And so, if you want to have a big positive impact with your career, this is the top area to focus on. In the next few sections, we’ll evaluate this issue on scale, neglectedness and solvability, drawing heavily on Existential Risk Prevention as a Global Priority by Nick Bostrom and unpublished work by Toby Ord, as well as our own research. First, let’s start with the scale of the issue. We’ve argued there’s likely over a 3% chance of extinction in the next century. How big an issue is this? One figure we can look at is how many people might die in such a catastrophe. The population of the Earth in the middle of the century will be about 10 billion, so a 3% chance of everyone dying means the expected number of deaths is about 300 million. This is probably more deaths than we can expect over the next century due to the diseases of poverty, like malaria.25 Many of the risks we’ve covered could also cause a “medium” catastrophe rather than one that ends civilisation, and this is presumably significantly more likely. The survey we covered earlier suggested over a 10% chance of a catastrophe that kills over 1 billion people in the next century, which would be at least another 100 million deaths in expectation, along with far more suffering among those who survive. So, even if we only focus on the impact on the present generation, these catastrophic risks are one of the most serious issues facing humanity. But this is a huge underestimate of the scale of the problem, because if civilisation ends, then we give up our entire future too. Most people want to leave a better world for their grandchildren, and most also think we should have some concern for future generations more broadly. There could be many more people having great lives in the future than there are people alive today, and we should have some concern for their interests. There’s a possibility the human civilization could last for millions of years, so when we consider the impact of the risks on future generations, the stakes are millions of times higher – for good or evil. As Carl Sagan wrote on the costs of nuclear war in Foreign Affairs: A nuclear war imperils all of our descendants, for as long as there will be humans. Even if the population remains static, with an average lifetime of the order of 100 years, over a typical time period for the biological evolution of a successful species (roughly ten million years), we are talking about some 500 trillion people yet to come. By this criterion, the stakes are one million times greater for extinction **than for** the more modest nuclear wars that kill “only” hundreds of **millions of people**. There are many other possible measures of the potential loss–including culture and science, the evolutionary history of the planet, and the significance of the lives of all of our ancestors who contributed to the future of their descendants. Extinction is the undoing of the human enterprise. We’re glad the Romans didn’t let humanity go extinct, since it means that all of modern civilisation has been able to exist. We think we owe a similar responsibility to the people who will come after us, assuming (as we believe) that they are likely to lead fulfilling lives. It would be reckless and unjust to endanger their existence just to make ourselves better off in the short-term. It’s not just that there might be more people in the future. As Sagan also pointed out, no matter what you think is of value, there is potentially a lot more of it in the future. Future civilisation could create a world without need or want, and make mindblowing intellectual and artistic achievements. We could build a far more just and virtuous society. And there’s no in-principle reason why civilisation couldn’t reach other planets, of which there are some 100 billion in our galaxy.26 If we let civilisation end, then none of this can ever happen. We’re unsure whether this great future will really happen, but that’s all the more reason to keep civilisation going so we have a chance to find out. Failing to pass on the torch to the next generation might be the worst thing we could ever do. So, a couple of percent risk that civilisation ends seems likely to be the biggest issue facing the world today. What’s also striking is just how neglected these risks are. Why these risks are some of the most neglected global issues Here is how much money per year goes into some important causes:27 As you can see, we spend a vast amount of resources on R&D to develop even more powerful technology. We also expend a lot in a (possibly misguided) attempt to improve our lives by buying luxury goods. Far less is spent mitigating catastrophic risks from climate change. Welfare spending in the US alone dwarfs global spending on climate change. But climate change still receives enormous amounts of money compared to some of these other risks we’ve covered. We roughly estimate that the prevention of extreme global pandemics receives under 300 times less, even though the size of the risk seems about the same. Research to avoid accidents from AI systems is the most neglected of all, perhaps receiving 100-times fewer resources again, at around only $10m per year. You’d find a similar picture if you looked at the number of people working on these risks rather than money spent, but it’s easier to get figures for money. If we look at scientific attention instead, we see a similar picture of neglect (though, some of the individual risks receive significant attention, such as climate change): Our impression is that if you look at political attention, you’d find a similar picture to the funding figures. An overwhelming amount of political attention goes on concrete issues that help the present generation in the short-term, since that’s what gets votes. Catastrophic risks are far more neglected. Then, among the catastrophic risks, climate change gets the most attention, while issues like pandemics and AI are the most neglected. This neglect in resources, scientific study and political attention is exactly what you’d expect to happen from the underlying economics, and are why the area presents an opportunity for people who want to make the world a better place. First, these risks aren’t the responsibility of any single nation. Suppose the US invested heavily to prevent climate change. This benefits everyone in the world, but only about 5% of the world’s population lives in the US, so US citizens would only receive 5% of the benefits of this spending. This means the US will dramatically underinvest in these efforts compared to how much they’re worth to the world. And the same is true of every other country. This could be solved if we could all coordinate — if every nation agreed to contribute its fair share to reducing climate change, then all nations would benefit by avoiding its worst effects. Unfortunately, from the perspective of each individual nation, it’s better if every other country reduces their emissions, while leaving their own economy unhampered. So, there’s an incentive for each nation to defect from climate agreements, and this is why so little progress gets made (it’s a prisoner’s dilemma). And in fact, this dramatically understates the problem. The greatest beneficiaries of efforts to reduce catastrophic risks are future generations. They have no way to stand up for their interests, whether economically or politically. If future generations could vote in our elections, then they’d vote overwhelmingly in favour of safer policies. Likewise, if future generations could send money back in time, they’d be willing to pay us huge amounts of money to reduce these risks. (Technically, reducing these risks creates a trans-generational, global public good, which should make them among the most neglected ways to do good.) Our current system does a poor job of protecting future generations. We know people who have spoken to top government officials in the UK, and many want to do something about these risks, but they say the pressures of the news and election cycle make it hard to focus on them. In most countries, there is no government agency that naturally has mitigation of these risks in its remit. This is a depressing situation, but it’s also an opportunity. For people who do want to make the world a better place, this lack of attention means there are lots high-impact ways to help. What can be done about these risks? We’ve covered the scale and neglectedness of these issues, but what about the third element of our framework, solvability? It’s less certain that we can make progress on these issues than more conventional areas like global health. It’s much easier to measure our impact on health (at least in the short-run) and we have decades of evidence on what works. This means working to reduce catastrophic risks looks worse on solvability. However, there is still much we can do, and given the huge scale and neglectedness of these risks, they still seem like the most urgent issues. We’ll sketch out some ways to reduce these risks, divided into three broad categories: 1. Targeted efforts to reduce specific risks One approach is to address each risk directly. There are many concrete proposals for dealing with each, such as the following: Many experts agree that better disease surveillance would reduce the risk of pandemics. This could involve improved technology or better collection and aggregation of existing data, to help us spot new pandemics faster. And the faster you can spot a new pandemic, the easier it is to manage. There are many ways to reduce climate change, such as helping to develop better solar panels, or introducing a carbon tax. With AI, we can do research into the “control problem” within computer science, to reduce the chance of unintended damage from powerful AI systems. A recent paper, Concrete problems in AI safety, outlines some specific topics, but only about 20 people work full-time on similar research today. In nuclear security, many experts think that the deterrence benefits of nuclear weapons could be maintained with far smaller stockpiles. But, lower stockpiles would also reduce the risks of accidents, as well as the chance that a nuclear war, if it occurred, would end civilisation. We go into more depth on what you can do to tackle each risk within our problem profiles: AI safety Pandemic prevention Nuclear security Run-away climate change We don’t focus on naturally caused risks in this section, because they’re much less likely and we’re already doing a lot to deal with some of them. Improved wealth and technology makes us more resilient to natural risks, and a huge amount of effort already goes into getting more of these. 2. Broad efforts to reduce risks Rather than try to reduce each risk individually, we can try to make civilisation generally better at managing them. The “broad” efforts help to reduce all the threats at once, even those we haven’t thought of yet. For instance, there are key decision-makers, often in government, who will need to manage these risks as they arise. If we could improve the decision-making ability of these people and institutions, then it would help to make society in general more resilient, and solve many other problems. Recent research has uncovered lots of ways to improve decision-making, but most of it hasn’t yet been implemented. At the same time, few people are working on the issue. We go into more depth in our write-up of improving institutional decision-making. Another example is that we could try to make it easier for civilisation to rebound from a catastrophe. The Global Seed Vault is a frozen vault in the Arctic, which contains the seeds of many important crop varieties, reducing the chance we lose an important species. Melting water recently entered the tunnel leading to the vault due, ironically, to climate change, so could probably use more funding. There are lots of other projects like this we could do to preserve knowledge. Similarly, we could create better disaster shelters, which would reduce the chance of extinction from pandemics, nuclear winter and asteroids (though not AI), while also increasing the chance of a recovery after a disaster. Right now, these measures don’t seem as effective as reducing the risks in the first place, but they still help. A more neglected, and perhaps much cheaper option is to create alternative food sources, such as those that be produced without light, and could be quickly scaled up in a prolonged winter. Since broad efforts help even if we’re not sure about the details of the risks, they’re more attractive the more uncertain you are. As you get closer to the risks, you should gradually reallocate resources from broad to targeted efforts (read more). We expect there are many more promising broad interventions, but it’s an area where little research has been done. For instance, another approach could involve improving international coordination. Since these risks are caused by humanity, they can be prevented by humanity, but what stops us is the difficulty of coordination. For instance, Russia doesn’t want to disarm because it would put it at a disadvantage compared to the US, and vice versa, even though both countries would be better off if there were no possibility of nuclear war. However, it might be possible to improve our ability to coordinate as a civilisation, such as by improving foreign relations or developing better international institutions. We’re keen to see more research into these kinds of proposals. Mainstream efforts to do good like improving education and international development can also help to make society more resilient and wise, and so also contribute to reducing catastrophic risks. For instance, a better educated population would probably elect more enlightened leaders (cough). Richer countries are better able to prevent pandemics — it’s no accident that Ebola took hold in some of the poorest parts of West Africa. But, we don’t see education and health as the best areas to focus on for two reasons. First, these areas are far less neglected than the more unconventional approaches we’ve covered. In fact, improving education is perhaps the most popular cause for people who want to do good, and in the US alone, receives 800 billion dollars of government funding, and another trillion dollars of private funding. Second, these approaches have much more diffuse effects on reducing these risks — you’d have to improve education on a very large scale to have any noticeable effect. We prefer to focus on more targeted and neglected solutions. 3. Learning more and building capacity We’re highly uncertain about which risks are biggest, what is best to do about them, and whether our whole picture of global priorities might be totally wrong. This means that another key goal is to learn more about all of these issues. We can learn more by simply trying to reduce these risks and seeing what progress can be made. However, we think the most neglected and important way to learn more right now is to do “global priorities research”. This is a combination of economics and moral philosophy, which aims to answer high-level questions about the most important issues for humanity. There are only a handful of researchers working full-time on these issues. Another way to handle uncertainty is to build up resources that can be deployed in the future when you have more information. One way of doing this is to earn and save money. You can also invest in your career capital, especially your transferable skills and influential connections, so that you can achieve more in the future. However, we think that a potentially better approach than either of these is to build a high-quality community that’s focused on reducing these risks, whatever they turn out to be. The reason this can be better is that it’s possible to grow the capacity of a community faster than you can grow your individual wealth or career capital. For instance, if you spent a year doing targeted one-on-one outreach, it’s not out of the question to find one other person with relevant expertise to join you. This would be an annual return to the cause of about 100%. Right now, we are focused on building the effective altruism community, which contains many people who want to reduce these risks. Moreover, the recent rate of growth, and studies of specific efforts to grow the community, suggest that high rates of return are possible. However, we expect that other community building efforts will also be valuable. It would be great to see a community of scientists trying to promote a culture of safety in academia. It would be great to see a community of policymakers who want to try to reduce these risks, and make government have more concern for future generations. Given how few people actively work on reducing these risks, we expect that there’s a lot that could be done to build a movement around them. In total, how effective is it to reduce these risks? Considering all the approaches to reducing these risks, and how few resources are devoted to some of them, it seems like substantial progress is possible. In fact, even if we only consider the impact of these risks on the present generation (ignoring any benefits to future generations), they’re plausibly the top priority. Here are some very rough and simplified figures to show how this could be possible. It seems plausible to us that $100 billion spent on reducing extinction risk could reduce it by over 1% over the next century. A one percentage point reduction in the risk would be expected to save about 100 million lives among the present generation (1% of about 10 billion people alive today). This would mean the investment would save lives for only $1000 per person. Greg Lewis has made a more detailed estimate, arriving at a mean of $9200 per life saved in the present generation.28 There are also more estimates in the thread. We think Greg is likely too conservative, because he assumes the risk of extinction is only 1% over the next century, when our estimate is that it’s several times higher. We also think the next billion dollars spent on reducing extinction risk could cause a larger reduction in the risk than Greg assumes (note that this is only true if the billion were spent on the most neglected issues like AI safety and biorisk, rather than climate change which already receives hundreds of billions of dollars of investment). We wouldn’t be surprised if the cost per present lives saved for the next one billion dollars invested in reducing extinction risk were under $100. GiveWell’s top recommended charity, Against Malaria Foundation (AMF), is often presented as one of the best ways to help the present generation and saves lives for around $7500 (2017 figures).29 So these estimates would put extinction risk reduction as better or in the same ballpark cost-effectiveness as AMF for saving lives in the present generation — a charity that was specifically selected for being outstanding on that dimension. Likewise, we think that if 10,000 talented young people focused their careers on these risks, they could achieve something like a 1% reduction in the risks. That would mean that each person would save 1000 lives over their careers in the present generation, which is probably better than what they could save by earning to give and donating to The Against Malaria Foundation.30 In one sense, these are unfair comparisons, because GiveWell’s estimate is far more solid and well-researched, whereas our estimate is more of an informed guess. There may also be better ways to help the present generation than AMF (e.g. policy advocacy). However, we’ve also dramatically understated the benefits of reducing extinction risks. The main reason to safeguard civilisation is not to benefit the present generation, but to benefit future generations. We ignored them in this estimate. If we also consider future generations, then the effectiveness of reducing extinction risks is orders of magnitude higher, and it’s hard to imagine a more urgent priority right now. Now you can either read some responses to these arguments, or skip ahead to practical ways to contribute. Who shouldn’t prioritise safeguarding the future? The arguments presented rest on some assumptions that not everyone will accept. Here we present some of the better responses to these arguments. You need to focus more on your friends and family We’re only talking about what the priority should be if you are trying to help people in general, treating everyone’s interests as equal (what philosophers sometimes call “impartial altruism”). Most people care about helping others to some degree: if you can help a stranger with little cost, that’s a good thing to do. People also care about making their own lives go well, and looking after their friends and family, and we’re the same. How to balance these priorities is a difficult question. If you’re in the fortunate position to be able to contribute to helping the world, then we think safeguarding the future should be where to focus. We list concrete ways to get involved in the next section. Otherwise, you might need to focus on your personal life right now, contributing on the side, or in the future. You think the risks are much lower than we’ve argued We don’t have robust estimates of many of the human-caused risks, so you could try to make your own estimates and conclude that they’re much lower than we’ve made out. If they were sufficiently low, then reducing them would cease to be the top priority. We don’t find this plausible for the reasons covered. If you consider all the potential risks, it seems hard to be confident they’re under 1% over the century, and even a 1% risk probably warrants much more action than we currently see. You think there’s almost nothing more we can do about the risks We rate these risks as less “solvable” than issues like global health, so expect progress to be harder per dollar. That said, we think their scale and neglectedness more than makes up for this, and so they end up more effective in expectation. Many people think effective altruism is about only supporting “proven” interventions, but that’s a myth. It’s worth taking interventions that only have a small chance of paying off, if the upside is high enough. The leading funder in the community now advocates an approach of “hits-based giving”. However, if you were much more pessimistic about the chances of progress than us, then it might be better to work on more conventional issues, such as global health. Personally, we might switch to a different issue if there were two orders of magnitude more resources invested in reducing these risks. But that’s a long way off from today. A related response is that we’re already taking the best interventions to reduce these risks. This would mean that the risks don’t warrant a change in practical priorities. For instance, we mentioned earlier that education probably helps to reduce the risks. If you thought education was the best response (perhaps because you’re very uncertain which risks will be most urgent), then because we already invest a huge amount in education, you might think the situation is already handled. We don’t find this plausible because, as listed, there are lots of untaken opportunities to reduce these risks that seem more targeted and neglected. Another example like this is that economists sometimes claim that we should just focus on economic growth, since that will put us in the best possible position to handle the risks in the future. We don’t find this plausible because some types of economic growth increase the risks (e.g. the discovery of new weapons), so it’s unclear that economic growth is a top way to reduce the risks. Instead, we’d at least focus on differential technological development, or the other more targeted efforts listed above. You think there’s a better way of helping the future Although reducing these risks is worth it for the present generation, much of their importance comes from their long-term effects — once civilisation ends, we give up the entire future. You might think there are other actions the present generation could take that would have very long-term effects, and these could be similarly important to reducing the risk of extinction. In particular, we might be able to improve the quality of the future by preventing our civilization from getting locked into bad outcomes permanently. This is going to get a bit sci-fi, but bear with us. One possibility that has been floated is that new technology, like extreme surveillance or psychological conditioning, could make it possible to create a totalitarian government that could never be ended. This would be the 1984 and Brave New World scenario respectively. If this government were bad, then civilisation might have a fate worse than extinction by causing us to suffer for millennia. Others have raised the concern that the development of advanced AI systems could cause terrible harm if it is done irresponsibly, perhaps because there is a conflict between several groups raising to develop the technology. In particular, if at some point in the future, developing these systems involves the creation of sentient digital minds, their wellbeing could become incredibly important. Risks of a future that contains an astronomical amount of suffering have been called “s-risks”.31 If there is something we can do today to prevent an s-risk from happening (for instance, through targeted research in technical AI safety and AI governance), it could be even more important. Another area to look is major technological transitions. We’ve mentioned the dangers of genetic engineering and artificial intelligence in this piece, but these technologies could also create a second industrial revolution and do a huge amount of good once deployed. There might be things we can do to increase the likelihood of a good transition, rather than decrease the risk of a bad transition. This has been called trying to increase “existential hope” rather than decrease “existential risk”.32 We agree that there might be other ways that we can have very long-term effects, and these might be more pressing than reducing the risk of extinction. However, most of these proposals are not yet as well worked out, and we’re not sure about what to do about them. The main practical upshot of considering these other ways to impact the future, is that we think it’s even more important to positively manage the transition to new transformative technologies, like AI. It also makes us keener to see more global priorities research looking into these issues. Overall, we still think it makes sense to first focus on reducing extinction risks, and then after that, we can turn our attention to other ways to help the future. One way to help the future we don’t think is a contender is speeding it up. Some people who want to help the future focus on bringing about technological progress, like developing new vaccines, and it’s true that these create long-term benefits. However, we think what most matters from a long-term perspective is where we end up, rather than how fast we get there. Discovering a new vaccine probably means we get it earlier, rather than making it happen at all. Moreover, since technology is also the cause of many of these risks, it’s not clear how much speeding it up helps in the short-term. Speeding up progress is also far less neglected, since it benefits the present generation too. As we covered, over 1 trillion dollars is spent each year on R&D to develop new technology. So, speed-ups are both less important and less neglected. To read more about other ways of helping future generations, see Chapter 3 of On the Overwhelming Importance of Shaping the Far Future by Dr. Nick Beckstead You’re confident the future will be short or bad If you think it’s virtually guaranteed that civilisation won’t last a long time, then the value of reducing these risks is significantly reduced (though perhaps still worth taking to help the present generation). We agree there’s a significant chance civilisation ends soon (which is why this issue is so important), but we also think there’s a large enough chance that it could last a very long time, which makes the future worth fighting for. Similarly, if you think it’s likely the future will be more bad than good, then the value of reducing these risks goes down (or if we have much more obligation to reduce suffering than increase wellbeing). We don’t think this is likely, however, because people want the future to be good, so we’ll try to make it more good than bad. We also think that there has been significant moral progress over the last few centuries (due to the trends noted earlier), and we’re optimistic this will continue. See more discussion in footnote 11.11 What’s more, even if you’re not sure how good the future will be, or suspect it will be bad in ways we may be able to prevent in the future, you may want civilisation to survive and keep its options open. People in the future will have much more time to study whether it’s desirable for civilisation to expand, stay the same size, or shrink. If you think there’s a good chance we will be able to act on those moral concerns, that’s a good reason to leave any final decisions to the wisdom of future generations. Overall, we’re highly uncertain about these big-picture questions, but that generally makes us more concerned to avoid making any irreversible commitments.33 Beyond that, you should likely put your attention into ways to decrease the chance that the future will be bad, such as avoiding s-risks. You’re confident we have much stronger moral obligations to help the present generation If you think we have much stronger obligations to the present generation than future generations (such as person-affecting views of ethics), then the importance of reducing these risks would go down. Personally, we don’t think these views are particularly compelling. That said, we’ve argued that even if you ignore future generations, these risks seem worth addressing. The efforts suggested could still save the lives of the present generation relatively cheaply, and they could avoid lots of suffering from medium-sized disasters. What’s more, if you’re uncertain about whether we have moral obligations to future generations, then you should again try to keep your options open, and that means safeguarding civilisation. Nevertheless, if you combined the view that we don’t have large obligations to future generations with the position that the risks are also relatively unsolvable, or that there is no useful research to be done, then another way to help present generations could come out on top. This might mean working on global health, mental health or speeding up technology. Alternatively, you might think there’s another moral issue that’s more important, such as factory farming. What can you do to help? Some areas to focus on Our best evidence suggests that we’re the only intelligent life in the observable universe.34 Might we be the generation that extinguishes this life, and leaves the universe barren for the rest of eternity? Let’s see how you can help avoid that.

#### Anticipating nuclear extinction breeds empathy and entangled care. Distancing ourselves from considering extinction reifies detached elitism.

Offord, 17—Faculty of Humanities, School of Humanities Research and Graduate Studies, Bentley Campus (Baden, “BEYOND OUR NUCLEAR ENTANGLEMENT,” Angelaki, 22:3, 17-25, dml) [ableist language modifications denoted by brackets]

You are steered towards overwhelming and inexplicable pain when you consider the nuclear entanglement that the species Homo sapiens finds itself in. This is because the fact of living in the nuclear age presents an existential, aesthetic, ethical and psychological challenge that defines human consciousness. Although an immanent threat and ever-present danger to the very existence of the human species, living with the possibility of nuclear war has infiltrated the matrix of modernity so profoundly as to paralyse [shut down] our mind-set to respond adequately. We have chosen to ignore the facts at the heart of the nuclear program with its dangerous algorithm; we have chosen to live with the capacity and possibility of a collective, pervasive and even planetary-scale suicide; and the techno-industrial-national powers that claim there is “no immediate danger” ad infinitum.8

This has led to one of the key logics of modernity's insanity. As Harari writes: “Nuclear weapons have turned war between superpowers into a mad act of collective suicide, and therefore forced the most powerful nations on earth to find alternative and peaceful ways to resolve conflicts.”9 This is the nuclear algorithm at work, a methodology of madness. In revisiting Jacques Derrida in “No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives),”10 who described nuclear war as a “non-event,” it is clear that the pathology of the “non-event” remains as active as ever even in the time of Donald Trump and Kim Jong-un with their stichomythic nuclear posturing.

The question of our times is whether we have an equal or more compelling capacity and willingness to end this impoverished but ever-present logic of pain and uncertainty. How not simply to bring about disarmament, but to go beyond this politically charged, as well as mythological and psychological nuclear algorithm? How to find love amidst the nuclear entanglement; the antidote to this entanglement? Is it possible to end the pathology of power that exists with nuclear capacity? Sadly, the last lines of Nitin Sawhney's “Broken Skin” underscore this entanglement:

Just 5 miles from India's nuclear test site

Children play in the shade of the village water tank

Here in the Rajasthan desert people say

They're proud their country showed their nuclear capability.11

As an activist scholar working in the fields of human rights and cultural studies, responding to the nuclear algorithm is an imperative. Your politics, ethics and scholarship are indivisible in this cause. An acute sense of care for the world, informed by pacifist and non-violent, de-colonialist approaches to knowledge and practice, pervades your concern. You are aware that there are other ways of knowing than those you are familiar and credentialed with. You are aware that you are complicit in the prisons that you choose to live inside,12 and that there is no such thing as an innocent bystander. You use your scholarship to shake up the world from its paralysis, abjection and amnesia; to unsettle the epistemic and structural violence that is ubiquitous to neoliberalism and its machinery; to create dialogic and learning spaces for the work of critical human rights and critical justice to take place. All this, and to enable an ethics of intervention through understanding what is at the very heart of the critical human rights impulse, creating a “dialogue for being, because I am not without the other.”13

Furthermore, as a critical human rights advocate living in a nuclear armed world, your challenge is to reconceptualise the human community as Ashis Nandy has argued, to see how we can learn to co-exist with others in conviviality and also learn to co-survive with the non-human, even to flourish. A dialogue for being requires a leap into a human rights frame that includes a deep ecological dimension, where the planet itself is inherently involved as a participant in its future. This requires scholarship that “thinks like a mountain.”14 A critical human rights approach understands that it cannot be simply human-centric. It requires a nuanced and arresting clarity to present perspectives on co-existence and co-survival that are from human and non-human viewpoints.15

Ultimately, you realise that your struggle is not confined to declarations, treaties, legislation, and law, though they have their role. It must go further to produce “creative intellectual exchange that might release new ethical energies for mutually assured survival.”16 Taking an anti-nuclear stance and enabling a post-nuclear activism demands a revolution within the field of human rights work. Recognising the entanglement of nuclearism with the Anthropocene, for one thing, requires a profound shift in focus

from the human-centric to a more-than-human co-survival. It also requires a fundamental shift in understanding our human culture, in which the very epistemic and rational acts of sundering from co-survival with the planet and environment takes place. In the end, you realise, as Raimon Panikkar has articulated, “it is not realistic to toil for peace if we do not proceed to a disarmament of the bellicose culture in which we live.”17 Or, as Geshe Lhakdor suggests, there must be “inner disarmament for external disarmament.”18 In this sense, it is within the cultural arena, our human society, where the entanglement of subjective meaning making, nature and politics occurs, that we need to disarm.

It is 1982, and you are reading Jonathan Schell's The Fate of the Earth on a Sydney bus. Sleeping has not been easy over the past few nights as you reluctantly but compulsively read about the consequences of nuclear war. For some critics, Schell's account is high polemic, but for you it is more like Rabindranath Tagore: it expresses the suffering we make for ourselves. What you find noteworthy is that although Schell's scenario of widespread destruction of the planet through nuclear weaponry, of immeasurable harm to the bio-sphere through radiation, is powerfully laid out, the horror and scale of nuclear obliteration also seems surreal and far away as the bus makes its way through the suburban streets.

A few years later, you read a statement from an interview with Paul Tibbets, the pilot of “Enola Gay,” the plane that bombed Hiroshima. He says, “The morality of dropping that bomb was not my business.”19 This abstraction from moral responsibility – the denial of the implications on human life and the consequences of engagement through the machinery of war – together with the sweeping amnesia that came afterwards from thinking about the bombing of Hiroshima, are what make you become an environmental and human rights activist. You realise that what makes the nuclear algorithm work involves a politically engineered and deeply embedded insecurity-based recipe to elide the nuclear threat from everyday life. The spectre of nuclear obliteration, like the idea of human rights, can appear abstract and distant, not our everyday business. You realise that within this recipe is the creation of a moral tyranny of distance, an abnegation of myself with the other. One of modernity's greatest and earliest achievements was the mediation of the self with the world. How this became a project assisted and shaped through the military-industrial-technological-capitalist complex is fraught and hard to untangle. But as a critical human rights scholar you have come to see through that complex, and you put energies into challenging that tyranny of distance, to activate a politics, ethics and scholarship that recognises the other as integral to yourself. Ultimately, even, to see that the other is also within.20

#### Their impact oversimplifies the contingency of violence

Svirsky 16 (Marcelo, School of Humanities and Social Inquiry, University of Wollongong, “Resistance is a structure not an event”, Settler Colonial Studies) DB

In what seems to be an attempt to soften Wolfe’s methodological position, Veracini explains that if ‘there is a plot in the “historiography of elimination” and more generally in settler-colonial studies it is that while the structure attempts to eliminate Indigenous peoples it fails to do so’. The ‘structure cannot be reduced to its intention’. 35 That is to say, Wolfe’s logic of elimination should not be equated with elimination itself. As Veracini explains: Far from equating settler colonialism with elimination, Wolfe’s ‘structure’ refers to a continuing relationship of inequality between Indigenous and settler collectives. Beside ‘structure’ and ‘event’, it seems important to note that Wolfe refers to a logic of elimination, not to elimination itself. After all, were Indigenous elimination to become an accomplished and irretrievable fact, settler colonialism would lose its logic.36 Though the key for Wolfe is to shed light on the mechanisms of elimination, Veracini takes Wolfe’s position that ‘we should not view the logic of elimination as solely a drive to exterminate Native human beings’, and suggests that we should focus on what the structure actualising the logic fails to accomplish.37 The difference between the two highlights the incompleteness of the settler project. If settler colonialism is not a fait accompli but an incomplete project invested in a continuing structuration of life actualising the logic of elimination, then we may expect the settler colonial paradigm to take seriously phenomena of struggle, resistance and confrontation, and hence to align itself with the idea of power not just as coercion or repression but as a complex multiplicity. This is simply because the incompleteness of elimination must be explained, and it cannot be explained just in terms of the oppressor’s self-error or strategic deferment. The methodological imperative that derives then, is to trace the forces that cause the settler structure to fail and remain incomplete – forces that work either by compelling retreat in specific policy areas, or because of the ineffectiveness of the settler structure in territorialising its logic and imposing its discourse, codifications, and meanings in all areas of life. As Macoun and Strakosch note, ‘[e]xposing the settler colonial project as fundamentally incomplete – and unable to be completed in the face of Indigenous resistance – has the potential to be a profoundly liberating and destabilizing move’. 38 This is because this move leads research to deal with liberatory forces. Some Palestinian scholars have taken the analysis of the Israeli settler state in this direction. Recently, Nadera Shalhoub-Kevorkian draws on Wolfe’s logic of elimination but not without combining her analysis of surveillance and fear with an account of practices of resistance.39 Similarly, Mazin Qumsiyeh notes that the brutal removal of villagers during Ottoman and later the British and, finally, Israeli rule over the past thirteen decades would have proceeded much faster and certainly would have resulted in a far more homogeneous Jewish state had it not been for Palestinian resistance.40 Explaining strategic and tactical changes in the continuing implementation of elimination only by means of the subject’s determination to eliminate appears as an act of theoretical cannibalism. The vicissitudes of elimination are the vicissitudes of the struggle, of resistance; or, as Veracini recently put it: the ‘settler colonial present is also an indigenous one’. 41 Settler stability, in other words, needs to be explained not just by way of the discourse of settler inscription but by taking seriously Veracini’s insistence that the settler colonial situation is best described in terms of a ‘permanent movement’. 42 Movement here needs to be conceived as a constantly changing composition of forces – those which seek to eliminate indigenous life together with those that either cause some of these attempts to fail, or that institute forms of life contiguous to settlerism – in both cases compelling settler colonialism to rework itself.

#### Removing patents would trigger vertical integration which is WORSE for competition and monopolization

**Weiner, 13** (Robert Weiner, Dr. Robert J. Weiner teaches international finance, economics, and strategy. He received his PhD in 1986, and has been at GW since 1994, Jan 2013, accessed on 10-29-2021, Chamberlitigation, "Brief of economists as amici curaie in support of respondants bowman", https://www.chamberlitigation.com/sites/default/files/scotus/files/Economists%20amicus%20brief%20-%20Bowman%20v.%20Monsanto%20Co.%20%28U.S.%20Supreme%20Court%29.pdf)//Babcii

B. Applying Exhaustion Could **Lead to Increased Vertical Integration**, Which Could Reduce Efficiency and Competition.

Companies historically have chosen from two basic models to extract the value of intellectual property. Some companies choose to keep their **i**ntellectual **p**roperty entirely within the organization by **vertically integrating** and engaging in all aspects of the design and production process in-house. Other companies adopt a strategy of performing certain functions in-house but also licensing others to enable the development of other products that are complementary to the patent holder's technology, thus potentially increasing the demand for the rights holder's invention. For example, Apple’s iOS operating system for phones and tablets is available only on hard ware that Apple provides. Google, in contrast, has broadly licensed its Android operating system, which is available on phones and tablets from Google's competitors as well as from Google itself.

Both **models have been used in the seed and trait business**. For example, Dow's Herculex® insect pro- tection trait was originally available almost exclusively in seed sold by Pioneer (Dow's development partner) and in Dow’s Mycogen® brand. See New Bt Trait Launched by Pioneer, Mycogen, CORN & SOY- BEAN DIGEST (June 21, 2001), available at http:// cornandsoybeandigest.com/new-bt-trait-launched-pio neer-mycogen. **In contrast**, Monsanto has **espoused broad licensing**: its strategy has been to make its traits available in the germplasm **of as many different seed companies as possible**. See, e.g., GianCarlo Moschini, Competition Issues in the Seed Industry and the Role of Intellectual Property, CHOICES, available at \_http://www.choicesmagazine.org/magazine/ print.php?article=120 (discussing Monsanto's broad licensing strategy).

One of the reasons that firms integrate vertically is to lower transaction costs involved in negotiating, monitoring and enforcing contracts. See, e.g., Dennis W. Carlton & Jeffrey M. Perloff, MODERN INDUSTRIAL ORGANIZATION 380 (3d ed. 2000). Accordingly, a rule that seed and trait patents are exhausted by a first sale could push inventors to a vertical integration model for a number of reasons. First, both traits and varietal parent seed are supplied to seed companies in germplasm that the licensees use to breed their own soybeans. Because the sale of that breeder stock would exhaust the innovator’s rights in its invention, the innovator would need to rely on contract remedies rather than patent infringement claims against the licensee, with all of the costs and risk that we have described above.

Additionally, a rule of exhaustion would **reduce incentives to outlicense traits** and germplasm because, by outlicensing, innovators take a risk that a licensee will destroy the innovator’s business model by selling to customers who save and **replant** seeds without adequate contractual protection of the inno- vator.

Because the core of an intellectual property right is the right to exclude, **innovators are not required to license their inventions to competitors**. See, eg., Hartford-Empire Co. v. United States, 323 U.S. 386, 432 (1945) (“A patent owner is not in the position of a quasi-trustee for the public or under any obligation to see that the public acquires the free right to use the invention. He has no obligation either to use it or to grant its use to others.”). But there is no efficiency justification for policies that prohibit the broad licensing of intellectual property rights. While vertical integration is not inherently **inferior to a broad licensing model**, **denying innovators the choice to license broadly is inefficient and anticompetitive.**

Providing incentives for seed and trait developers **to create closed systems would harm growers by reducing competition** to supply soybeans containing a particular trait. Broad trait licensing means that traits can be available in soybeans offered by dozens of soybean seed companies, instead of just companies affiliated with the trait developer. **Farmers benefit from the competition among seed suppliers this incentive structure enables**. The alternative model— **where Monsanto traits are available only in Monsanto germplasm** and Dow traits are available only in Dow germplasm—**would lead to higher prices and less innovation.**

#### It destroys small farmers --- It forces them to ignore cost-efficiency and take predatory loans

**Weiner, 13** (Robert Weiner, Dr. Robert J. Weiner teaches international finance, economics, and strategy. He received his PhD in 1986, and has been at GW since 1994, Jan 2013, accessed on 10-29-2021, Chamberlitigation, "Brief of economists as amici curaie in support of respondants bowman", https://www.chamberlitigation.com/sites/default/files/scotus/files/Economists%20amicus%20brief%20-%20Bowman%20v.%20Monsanto%20Co.%20%28U.S.%20Supreme%20Court%29.pdf)//Babcii

1. Seed and trait prices would rise as innovators set prices to capture the full value of the use of their inventions over many generations of seed.

If the exhaustion doctrine applied, seed and trait innovators would need to price seed to capture not just the value of a single use, but the value of using the seed and trait **for many generations** in the future, as well as the value of the right to breed with the seed. This price for perpetual rights to use and reuse the patented technology would necessarily be **far higher** than the price to use the technology a single time.

This **price increase would reduce the welfare of farmers** for several reasons. While there might superficially appear to be no economic difference be- tween charging annual license fees and charging **a single perpetual license fee** that is the discounted present value of those annual payments, the analysis is not so simple. Given the choice, different farmers would engage in seed saving to different degrees. In fact, even before transgenic traits emerged, most soy- bean farmers did not save seed but instead purchased new seed of whatever variety each believed was likely to produce the greatest yield in a particular environment. See, e.g., SEED INDUSTRY IN U.S. AGRICULTURE. at 36 (“About 25% of soybean seed in 1997 was estimated to be farmer saved.”). In a world where seed and trait patents were exhausted after the first sale, the higher up-front cost of seeds and traits (that included saved seed rights) would push farmers to save seed when they would otherwise prefer not to do so. The majority of farmers that would prefer to take advantage of new seed varieties each year rather than save seed would experience a loss in welfare from the **inability to cost-effectively purchase** the best new seed varieties each year, even if the cost of a perpetual license were financially equivalent to the cost of buying new seed each year.

Farmers would also suffer because, even if the price for a perpetual license were set at the present value of annual license fees, farmers are not indifferent to high up-front costs. Many individual **farmers borrow to buy seed**, paying back the loan when the crop is harvested. If farmers faced a higher up-front cost, **loans would** need to be **larger**, have longer terms, and would be **riskier** and **subject to higher interest rates**.

This harm to farmers would translate into consumer harm in several ways. Farmers that lost the practical ability to buy new and improved varieties each year would suffer from **reduced crop yield**, **reducing output and raising prices** to consumers. Farmers’ increased financing costs for **longer term loans would also be reflected in higher prices** passed along to consumers. Finally, smaller farmers with less access to capital are likely to be disproportionately harmed by a shift from annual license fees to an upfront pricing model. These farmers will face higher costs and be less effective competitors.

# 2NC

## T --- Courts

### 2NC --- O/V

#### 2. ‘Prohibitions’ must be legislative enactments

Benjamin Hill 7, Judge on the Georgia Appeals Court, “Rose v. State”, Court of Appeals of Georgia, 1 Ga. App. 596, 601-602, 58 S.E. 20, 22-23, 1907 Ga. App. LEXIS 47, 4/11/1907

The words "otherwise prohibited," relied on by the State, really mean nothing in this statute. When the legislature used the words "prohibited by law," it exhausted the subject, and the addition of the words "high license or [\*\*\*11] otherwise" was "wasteful and ridiculous excess." These general words are sometimes added to specific enumeration in statutes out of abundance of caution, but they usually mean nothing. Certainly such words must be "restricted to the same genus as the things enumerated," and the use of the word "otherwise," following the words "prohibited by law," meant that the "otherwise" prohibition of the sale of liquor was to be a legal prohibition, that is, prohibited by the law of high license, or otherwise prohibited by law. But we do not think this general word means anything in this statute. Whatever it was intended to mean, it could not by any rule of logic give to the failure of the commissioners to grant licenses the force and effect of a positive enactment prohibiting the sale. The word "prohibit" is an active, transitive verb. As defined by the Standard Dictionary, it means "to forbid, especially by authority or legal enactment; interdict; as, to prohibit liquor-selling, or a person from selling liquor." The word "prohibit," [\*\*23] in its legal sense, implies some legislative enactment forbidding something. "The laws of England, from the early Plantagenets, sternly prohibited the [\*\*\*12] conversion of malt into alcohol." "Prohibition," in the United States, specifically means "the forbidding [\*602] by legislative enactment of the manufacture and sale of alcoholic liquors for use as beverage." Giving, therefore, to the word "prohibited" its ordinary signification and its technical meaning, as applied to the particular subject-matter of the sale of spirituous liquors, it must involve some positive act done by authority.

#### 3. AND “the scope of antitrust law” is not governed by court action

**Utah Law Review, 63** (Utah Law Review, Leading law review for the university of Utah, 1963, accessed on 7-20-2021, Utah Law Review, "CASES NOTED" “GOVERNMENT CONTEMPT ORDER PROVIDES POSSIBLE PRIMA FACIE CASEFOR PRIVATE ANTITRUST ACTION", https://collections.lib.utah.edu/dl\_files/e6/34/e6346be7b172efa1c6d32d6e15d4f5094339c121.pdf)//Babcii

It does not, however, necessarily follow that the same is true for the purposes of a private litigant. It must be recognized that the private litigant's rights exist only by virtue of section 5. The term "antitrust laws" has been narrowly construed to **include only** the **statutory provisions** of the Sherman and Clayton Acts **and to exclude other** statutes which apply **broad antitrust policies** to specific segments of business. 22 If this interpretation be accepted, it is arguable that the term "antitrust laws" as used in section 5 excludes antitrust decrees on which the contempt violation was based. 23 Further, the statutory language here involved, "a final **judgment or decree** . . . rendered . . . under the antitrust laws to the effect that a defendant has violated said laws . . ." does not bear out the interpretation given the section by the instant court. From the literal language of the section it would appear that the complaint in the instant case was based upon a criminal contempt citation brought for violation of a court order and not for violation of the antitrust laws. In a similar case, another Federal District Court stated that "**the term 'antitrust laws' could not be construed as** pertaining to a judgment or decree entered by **a court** in connection with an antitrust case." 24

#### 4. AND Resolved implies a legislative instrument

LA House 5 (Lousiana House of Representatives, <http://house.louisiana.gov/house-glossary.htm>)

Resolution A legislative instrument that generally is used for making declarations, stating policies, and making decisions where some other form is not required. A bill includes the constitutionally required enacting clause; a resolution uses the term "resolved". Not subject to a time limit for introduction nor to governor's veto. ( Const. Art. III, §17(B) and House  Rules 8.11 , 13.1 , 6.8 , and 7.4)

## Case

### AT: Dalley

#### 2. Dally is wrong – native subjectivity’s not immutable

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Apprehending this history as what Jodi Byrd has called the “transit” over which the international “postwestern” cityscape of Las Vegas is realized leads us into a reading of a very different type of frontier than the one memorialized on Fremont Street (Transit xv). Read this way, as a site of Indigenous dispossession, the West cannot be seen as a dynamic site of pure possibility, as Gilles Deleuze and Félix Guattari have represented it, as “a rhizomatic West, with its Indians without ancestry, its ever- receding limit, its shifting and displaced frontiers” (19). The repetitive revisitation of frontier tropes recalls what critic Hamish Dalley calls “the frozen temporality of settler- colonial narrative,” which, “fixated on the moment of the frontier, recalls nothing so much as Freud’s description of the ‘repetition compulsion’ attending trauma” (Dalley). The “hyperreal West” in this context emerges as a fantasy (Lewis 194), in the sense that theorist Jacqueline Rose describes in her work on Israel/Palestine. “Never completely losing its grip, fantasy is always heading for the world it only appears to have left behind” (3).5 Of course settler colonialism is but one of the “secret histories of Las Vegas” that underwrite the postmodern wonderland visitors fi nd on Fremont Street and the strip, and but one of many structures of violence that shape life in the contemporary western United States.6 Nonetheless, it remains a structure central to the consideration of “westness.” As the postwestern critics argue, “westness” is neither contained by geography (as the popularity of the Western genre internationally attests), nor necessarily representative of cultural production being produced within the western United States (Kollin x– xi). When we speak of a cultural production as “Western,” we are speaking of a work that addresses the process and consequences of settler conquest, whether we are discussing a California memoir, an Australian novel, or an Italian fi lm.7 This is not to say that Western cultural production is always a result of settler colonial ideology, but rather that it is engaged with questions pertaining to it. Th e problem of the West is, in a crucial sense, the problem of settler colonialism. Imagining postwestern futures thus requires a critical outlook that is more than just inclusive in its politics, transnational in its scope, and poststructuralist in its methodology. Our movement toward the “post” in the conceptual space of the Western must be decolonial in its orientation. Such a critique would abandon unilateral settler attempts at postnational place-making in order to critique settler colonial structures of violence. Such a critique would not work to reify these structures as permanent or inevitable, but rather to probe their contradictions, and to promote the Indigenous intellectual traditions that have long been at work critiquing the settler colonial present in order to shape a decolonial future.8 We hope that this special issue of Western American Literature, which features critical readings of western American film and literature by three scholars from different fields and national backgrounds, can contribute toward this effort.

# 1NR --- Swing 2 R4

## 1NR --- PIC

### 2NC --- NB

#### 1. Toxic waste causes catastrophic environmental damage

**Cribb 17** - (Julian Cribb, Fellow of the Australian Academy of Technological Sciences and Engineering, former Director, National Awareness, CSIRO, “The Poisoner,” Surviving the 21st Century Chapter 6)

There are two essential points about the Earthwide chemical flood. First it is quite new. It began with the industrial revolution of the late nineteenth century, but expanded dramatically in the wake of the two world wars—where chemicals were extensively used in munitions—and has exploded in deadly earnest in the past 50 years, attaining a new crescendo in the early twenty-first century. It is something our ancestors never faced—and to which we, in consequence, lack any protective adaptations which might otherwise have evolved due to constant exposure to poisons. Second, the toxic flood is, for the most part, preventable. It is not compulsory—but is an unwanted by-product of economic growth. Though driven by powerful industries and interests, it still lies within the powers and rights of citizens, consumers and their governments to demand it be curtailed or ended and to encourage industry to safer, healthier products and production systems. The issue is whether, or not, a wise humanity would choose to continue poisoning our children, ourselves and our world. Regulatory Failure Despite the fact that around 2000 new chemicals are released onto world markets annually, most have not received proper health, safety or environmental screening—especially in terms of their impact on babies and small children. Regulation has so far failed to make any serious curtailment of this flood: only 21 out of 144,000 known chemicals have been banned internationally, and this has not eliminated their use. At such a rate of progress it will take us more than 50,000 years to identify and prohibit or restrict all the chemicals which do us harm. Even then, bans will only apply in a handful of well-regulated countries, and will not protect the Earth system nor humanity at large. Clearly, national regulation holds few answers to what is now an out-of-control global problem. Furthermore, the chemical industry is relocating from the developed world (where it is quite well regulated and observes its own ethical standards) and into developing countries, mainly in Asia, where it is largely beyond the reach of either ethics or the law. However, its toxic emissions return to citizens in well-regulated countries via wind, water, food, wildlife, consumer goods, industrial products and people. The bottom line is that it doesn’t matter how good your country’s regulations are: you and your family are still exposed to a growing global flood of toxins from which even a careful diet and sensible consumer choices cannot fully protect you. The wake-up call to the world about the risks of chemical contamination was issued by American biologist Rachel Carson when she published Silent Spring in 1962, in which she warned specifically about the impact of certain persistent pesticides used in agriculture. Since her book came out, the volume of pesticide use worldwide has increased 30-fold, to around four million tonnes a year in the mid-2010s. Since the modern chemical age began there has been a string of high-profile chemical disasters: Minamata, the Love Canal, Seveso, Bhopal, Flixborough, Oppau, Toulouse, Hinkley, Texas City, Jilin, Tianjin. Most of these display a familiar pattern of unproductive confrontation between angry citizens, industry and regulators, involving drawn-out legal battles that deliver justice to nobody. By their spectacular and local nature, such events serve to distract from the far larger, more insidious and ubiquitous, universal toxic flood. Chemists and chemical makers often claim that their products are ‘safe’ because individual exposure (e.g. in a given product, like a serve of food) is too low to result in a toxic dose, a theory first put forward by the mediaeval scholar Paracelsus in the sixteenth century. This ‘dose related’ argument is disingenuous, if not dishonest—as modern chemists well know—for the following reasons: Most chemicals target a receptor or receptors on certain of your body cells, to cause harm. There may be not one, but hundreds or even thousands of different chemicals all targeting the same receptor, so a particular substance may contribute an unknowable fraction to an overall toxic dose. That does not make it ‘safe’. Chemicals not known to be poisonous in small doses on their own can combine with other substances in water, air, food or your body to create a toxin. No manufacturer can truthfully assert this will not happen to their products. Chemical toxicity is a function of both dose and the length of time you are exposed to it. In the case of persistent chemicals and heavy metals, this exposure may occur over days, months, years, even a lifetime in some cases. Tiny doses may thus accumulate into toxic ones. Most chemical toxicity is still measured on the basis of an exposed adult male. Babies and children being smaller and using much more water, food and air for their bodyweight, are therefore more at risk of receiving a poisonous dose than are adults. Chemicals and minerals are valuable and extremely useful. They do great good, save many lives and much money. No-one is suggesting they should all be banned. But their value may be for nothing if the current uncontrolled, unmonitored, unregulated and unconscionable mass release and planetary saturation continues. Chemical Extinction Two billion years ago, excessive production of one particular poisonous chemical by the inhabitants of Earth caused a colossal die-off and threatened the extermination of all life. That chemical was oxygen and it was excreted by the blue-green algae which then dominated the planet, as part of their photosynthetic processes. After several hundred million of years, the planet’s physical ability to soak up the surplus O2 in iron formations, oceans and sediments had reached saturation and the gas began to poison the existing life. This event was known as the ‘oxygen holocaust’, and is probably the nearest life on Earth has ever come to complete disaster before the present (Margulis and Sagan 1986). Since it developed slowly, over tens of millions of years, the poisonous atmosphere permitted some of these primitive organisms to evolve a tolerance to O2—and this in time led to the rise of oxygen-dependent species such as fish, mammals and eventually, us. The takehome learning from this brush with total annihilation is that it is possible for living creatures to pollute themselves into oblivion, if they don’t take care to avoid it or rapidly adapt to the new, toxic environment. It’s a message that humans, with our colossal planetary chemical impact, would do well to ponder. While it is unlikely that human chemical emissions alone could reach such a volume and toxic state as to directly threaten our entire species with extinction (other than through carbon emissions in a runaway global warming event) or even the collapse of civilisation, it is likely they will emerge as a serious contributing factor during the twenty-first century in combination with other factors such as war, climate change, pandemic disease and ecosystem breakdown. Credible ways in which man-made chemicals might imperil the human future include: Undermining the immune systems, physical and mental health of the population through growing exposure to toxins Reducing the intelligence of current and future generations through the action of nerve poisons on the developing brains and central nervous systems of children, rendering humanity less able to solve its problems and adapt to major changes; and by increasing the level of violent crime and conflict in society, which is closely linked to lower IQ. Bringing down the economy through the massive healthcare costs of having to nurse, treat and maintain a growing proportion of the population disabled by lifelong chronic chemical exposure. By poisoning the ecosystem services—clean air, water, soil, plants, insects and wildlife—on which humanity depends for its own survival and thereby contributing to potential global ecosystem breakdown By augmenting the global arsenal of weapons of mass destruction and hence the risk of their use by nations or uncontrollable fanatics.

#### 2. Nano solves human mortality

**Gaudin 9** (Sharon Gaudin is a science writer at Worcester Polytechnic Institute and an experienced technology reporter. Citing Ray Kurzweil, received the 1999 National Medal of Technology and Innovation, the United States' highest honor in technology, inducted into the National Inventors Hall of Fame, established by the U.S. Patent Office, received 21 honorary doctorates, BS in Computer Science from MIT. <KEN>"Nanotech could make humans immortal by 2040, futurist says," Computerworld. October 1, 2019. DOA: 1/1/20. https://www.computerworld.com/article/2528330/nanotech-could-make-humans-immortal-by-2040--futurist-says.html)

In 30 or 40 years, we'll have microscopic machines traveling through our bodies, repairing damaged cells and organs, effectively wiping out diseases. The nanotechnology will also be used to back up our memories and personalities.

In an interview with Computerworld, author and futurist Ray Kurzweil said that anyone alive come 2040 or 2050 could be close to immortal. The quickening advance of nanotechnology means that the human condition will shift into more of a collaboration of man and machine, as nanobots flow through human blood streams and eventually even replace biological blood, he added.

That may sound like something out of a sci-fi movie, but Kurzweil, a member of the Inventor's Hall of Fame and a recipient of the National Medal of Technology, says that research well underway today is leading to a time when a combination of nanotechnology and biotechnology will wipe out cancer, Alzheimer's disease, obesity and diabetes.

It'll also be a time when humans will augment their natural cognitive powers and add years to their lives, Kurzweil said.

"It's radical life extension," Kurzweil said. "The full realization of nanobots will basically eliminate biological disease and aging. I think we'll see widespread use in 20 years of [nanotech] devices that perform certain functions for us. In 30 or 40 years, we will overcome disease and aging. The nanobots will scout out organs and cells that need repairs and simply fix them. It will lead to profound extensions of our health and longevity."

Of course, people will still be struck by lightning or hit by a bus, but much more trauma will be repairable. If nanobots swim in, or even replace, biological blood, then wounds could be healed almost instantly. Limbs could be regrown. Backed up memories and personalities could be accessed after a head trauma.

#### 3. AND --- Solves warming

**Aithal & Aithal 18** (Dr. P. S. Aithal – Director, Srinivas Institute of Management Studies, Srinivas University. Dr. Shubhrajyotsna Aithal – Assistant Professor, College of Engineering & Technology, Srinivas University. <KEN> “Nanotechnology based Innovations and Human Life Comfortability –Are we Marching towards Immortality?” International Journal of Applied Engineering and Management Letters (IJAEML), (2018), 2(2), 71-86. DOA: 1/1/20. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3289262>)

Experts all over the world are in consensus that one of the major factors that will determine the future of human health is the health of our environment and the planet. In the environmental sciences, nanotechnology is a very hot topic, especially when addressing environmental sustainability and reversal of environmental damage caused by the actions of mankind. Nanotechnologists alongside environmental experts have been able to utilize nanomotor degradation and removal of contaminants from water sources. Environmentalists are excited about the use of this technology for water quality monitoring and eventually would like to see “sense and destroy” applications. Future directions in this field even entail immunology influenced chemotactic abilities capable of allowing nanomachines to track contamination back to its source for clearance and reporting to the appropriate authorities. In environmental applications of nanotechnology, a kind of nanorobots called nanomachines can self-replicate under pre-determined, set conditions, can potentially help people to control the changes in the environment. Nanorobots can be programmed to act like a buffer to prevent environmental changes, and help to maintain predetermined temperatures and pressure conditions. Nanomachines also have the ability to act like a chemical factory to process excessive levels of CO2 from the air or produce nontoxic endothermic or exothermic reactions to heat or cool the environment. Thus, nanomachines can be used to cool the oceans to prevent further melting of artic ice. The light reflective properties of nanomaterials added to the oceans can be altered and hence by decreasing or increasing the oceans ability to absorb sunlight could have considerable effects on global warming. Such possibilities for solving various environmental problems and pollutions are truly endless and exciting to for further research. Nanotechnology not only has tremendous implications for the monitoring of human health but also in real time monitoring of the environment and its purification in ways before never thought possible.

#### Turns ag

EPA, 16 (EPA, Environmental Protection Agency, 2016 (No actual date listed but it’s the date of the newest article it cites), accessed on 2-26-2022, Climatechange.chicago, "Climate Impacts on Agriculture and Food Supply | Climate Change Impacts | US EPA", <https://climatechange.chicago.gov/climate-impacts/climate-impacts-agriculture-and-food-supply#:~:text=Climate%20change%20can%20disrupt%20food,result%20in%20reduced%20agricultural%20productivity.)//Babcii>

**Climate change is very likely to affect food security** at the global, regional, and local level. Climate change can disrupt food availability, reduce access to food, and affect food quality.[[14]](https://climatechange.chicago.gov/climate-impacts/climate-impacts-agriculture-and-food-supply#ref14)  For example, projected increases in temperatures, changes in precipitation patterns, changes in extreme weather events, and reductions in water availability may all result in reduced agricultural productivity. **Increases in the frequency and severity extreme weather events can also interrupt food delivery**, and resulting spikes in food prices after extreme events are expected to be more frequent in the future.  Increasing **temperatures can contribute to spoilage and contamination.**

[Internationally](https://climatechange.chicago.gov/climate-impacts/international-climate-impacts), these effects of climate change on agriculture and food supply are likely to be similar to those seen in the United States. However, other stressors such as population growth may magnify the effects of climate change on food security. In developing countries, adaptation options like changes in crop-management or ranching practices, or improvements to irrigation are more limited than in the United States and other industrialized nations.

### 2NC --- AT --- No Patents/Not living

#### Yes the plan links ---

#### 1. It is a “living organism” for the same reason that seeds are --- They are made of cells AND can reproduce

Iati, 21 (Marisa Iati, General Assignment reporterEducation: M.A. in Journalism and Public Affairs, American University; B.A. in American Studies, University of Notre Dame, 11-30-2021, accessed on 1-8-2022, The Washington Post, "These living robots made of frog cells can now reproduce, study says", <https://www.washingtonpost.com/science/2021/11/30/living-robots-reproduction-study/>)//Babcii

Knowing that xenobots’ shapes affect their behavior, the computer scientists then ran algorithms to figure out which form would help the organism to replicate repeatedly. They discovered that a “C” shape resembling Pac-Man from the 1980 video game series seemed to be best, and one of the biologists used microsurgical tools to carve the xenobots into that design. As the algorithms predicted, the Pac-Man-shaped **xenobots gathered individual stem cells into clusters, which became xenobots of their own**. This type of replication is based on the organisms’ movement, rather than growing and then shedding a new being **as other animals and plants do**, Kriegman said. Xenobots straddle an unusual line between living organisms and robots. **They are organisms because they are made of stem cells and can reproduce**. But they are also robots because they can move on their own and perform physical labor, Kriegman said. Although most robots are made of metal, he said robots are defined not by their material, but by what they can do.

#### 2. What are you on about --- This card says HUMAN MADE organisms ARE patentable as long as it modified the genetic material of something which IS what Xenobots are

Waddell 21 Waddell, M. (2021, April 9). The magic - and the monopoly - of Seeds: LIVING Non-GMO : The Non-GMO Project. GMO. <https://livingnongmo.org/2021/04/01/the-magic-and-the-monopoly-of-seeds///> zh

Patents are a kind of intellectual property right meant to promote and protect innovation. They provide legal ownership to the inventors of new and useful discoveries for a limited period of time. Different classes of patents apply to different types of inventions. The largest category is “utility patents,” which can apply to “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” Many of the appliances, gadgets and gizmos that we use in modern life would have been covered by utility patents when they were invented. Ownership of living organisms like plants, however, was viewed differently at the beginning of the last century. Living organisms were considered products of nature and not eligible for patents. The work of plant breeders and seed producers is unique: It’s a combination of the products and processes of nature and human intervention. In time, provisions were made to offer some protection to plant breeders. Plant patents were first introduced in 1930. However, seed varieties — which reproduce sexually and include many of our common food crops — were not eligible for plant patents. It wasn’t until the Plant Variety Protection Act of 1970 (PVPA) that seed breeders had some protection for the varieties they produced. The PVPA walks a fine line: While it offers protection to seed breeders, the Act acknowledges that continued innovation depends on the plants and seeds being shared. To keep the practice of plant breeding moving forward, neither plant patents nor plant variety protections provide the kind of exclusive power that utility patents — which we mentioned above in relation to appliances and gadgets — do. According to legal scholar Malla Pollack, the laws that protect plant breeders have two significant exceptions: “one allowing farmers to save seed for later planting and one allowing research. “ Under the PVPA, seed varieties can, in some instances, be shared. Other researchers can build on the earlier work, and farmers can save seeds for planting the next year — a practice that bolsters their autonomy and builds a supply of regionally-adapted seeds that offer some of the best genetic traits for resilience and high yields. **Genetically modified organisms** and the techniques used to create them are **eligible for the much more restrictive utility patents**. **This classification prohibits farmers from saving or breeding the seed and keeps the genetic material private for the duration of the patent**. The legal basis for this decision is all thanks to General Electric, an oil spill and a genetically engineered bacteria. How GMOs changed the landscape In the 1970s, microbiologist and General Electric employee Dr. Ananda Chakrabarty created a genetically engineered bacteria capable of breaking down crude oil. Dr. Chakrabarty saw a potential use for this bacteria in cleaning up oil spills. His quest to patent his invention inadvertently set the stage for the privatization of the seed supply. Dr. Chakrabarty’s GMO bacteria was initially denied a patent because bacteria is a living organism. Living organisms were considered a “product of nature” by the U.S. Patent Office. The only patent class that permitted living organisms was plant patents, and the GMO bacteria didn’t fit in there. Ultimately, the **Supreme Court decided the GMO bacteria qualified as a “new composition of matter”** — one of the clauses describing a utility patent — **because of the genetic modification**. The genetically engineered bacteria was a living organism, but because of the modification to its DNA, it was no longer in a state of nature. **This decision established human-made organisms as patentable**, and just as importantly, patentable **under the restrictive utility class**. The restrictions of utility patents are why the genetic material is held privately — unavailable for public research — for the duration of the patent, and why farmers cannot save GMO seed. Protecting GMOs with utility patents also reveals a kind of duplicity in the rhetoric of the chemical companies that create them: To investors and patent offices, companies emphasize the novelty and innovation of GMOs to secure funding and utility patents, while to regulatory boards and the general public, they argue the opposite, marketing GMOs as an extension of traditional breeding techniques. To one audience, they cry, “It’s totally new!” To another, “It’s totally natural!” It’s no wonder chemical companies face a skeptical public. Privatization and monopoly in the food system “The courts and the PTO [Patent and Trademark Office] have given a few large businesses the power to close down most independent research on basic food crops.” — Malla Pollack For all the resources deployed to develop GMO crops and the fortunes made from marketing them, there are at this time a limited number of commercially available varieties owned by a handful of corporations. This small group casts a vast shadow across the agricultural land of North America — 90% of U.S. cropland is dedicated to just 3 commodity GMO crops (corn, cotton and soy). From there, GMO crops are processed and find their way into an estimated 80% of the conventional processed foods. This produces a very unbalanced kind of control of food and resources: This monopolization means that our food systems — and the ecosystems they rely upon — are based on a limited number of crops. The more reliant we are on that limited number of crops, the more our fates are tied to theirs. As the effectiveness of herbicide-tolerant and pest-resistant crops fail, it’s well past time to diversify our food system portfolio. Monopolies do not foster innovation, and chemical corporations show no signs of loosening their grip. Some of the most powerful corporations in the world routinely harass farmers, seed savers and breeders around the globe as they try to operate outside the monopolized and privatized seed supply. Harassment can come in the form of legal action, as has been extensively reported by the Center for Food Safety. There are also cases of casual intimidation, such as when a major corporation mailed baseless patent infringement notices to small seed companies across the U.S.; or in another instance when good faith efforts by small farmers to resolve GMO contamination risks were rebuffed by corporate lawyers.

#### 3. Xenobots ARE patentable tech

Wood, 22 (Jayde Wood, Associate - Patent Agent / Trademark Agent, Vancouver, 1-26-2022, accessed on 2-26-2022, Gowling WLG, "The curious case of xenobots part 1 – Patenting of living machines", <https://gowlingwlg.com/en/insights-resources/articles/2022/case-of-xenobots-part-i-patenting-living-machines/>)//Babcii

So are xenobots higher life forms or lower life forms? Nature has worked to blur any clear taxonomic dividing line, which leaves the resolution of a clear legal dividing line in doubt. **Xenobots are structurally akin to multicellular organisms**, artificially assembled from non-genetically modified cells of fertilized embryos. In current practice, the Canadian Intellectual Property Office takes the policy position that fertilized eggs are a higher life form; however, in the Harvard Mouse decision where the Court opined that fertilized eggs are patentable compositions of matter.[[9]](https://gowlingwlg.com/en/insights-resources/articles/2022/case-of-xenobots-part-i-patenting-living-machines/" \l "_ftn9" \o ") These disparities again highlight the challenges of basing a legal dividing line between patentable and unpatentable biological subject matter on an ill defined conception of "higher" and "lower" life forms – when that distinction is undermined by the intricate nuances of biology.

Apart from xenobots themselves, there are related aspects of more clearly patentable subject matter. The **processes by which xenobots are made** are likely to fall within patentable subject-matter. Further, the use of xenobots for particular purposes may be patentable subject-matter.

### 2NC --- AT --- Patents Bad

#### 1. Immunity --- There’s a precedent of patents being immune to antitrust --- that’s key to innovation.

Schuster ’21 [W. Michael and Gregory Day; 2021; Professors at the University of Georgia’s Terry College of Business; Wisconsin Law Review, “Colluding Against a Patent,” Forthcoming Volume]

Courts have struggled to determine when, if ever, patent strategies may constitute an antitrust offense. In hopes of harmonizing patent and antitrust laws, the general rule is that a patent grants a zone of antitrust immunity, though questions persist about the scenarios in which a rightsholder has exceeded their patent's scope. 35Consider the competing functions of patent and antitrust laws.

1. Patent Law, Exclusion, and Innovation

The patent system is meant to promote innovation by granting twenty years of exclusive rights. 36Experts have long thought that society would lack incentives to create if third parties could copy and sell an inventor's device without incurring the costs of creation. 37To avoid this outcome, a patent confers exclusive rights, allowing the patent holder to charge monopoly prices (to the degree that consumers are willing to pay high [\*546] prices). 38If a party employs another's patented technology without acquiring a license, the patent owner may recover damages and seek injunctive relief, estopping the infringer from using the device altogether. 39Because patent law lacks a general defense of innocent or accidental infringement, firms must exercise significant caution in creating, employing, and selling technology. 40

Since a patent embodies "the right to exclude," it may come as little surprise that the system impedes degrees of competition. 41This has generated allegations that some patentees have sought to erect barriers to competition rather than to protect original technology. 42If patent owners undermine enough competition and innovation, critics contend that the abuse of patent rights should, at some point, constitute an antitrust offense. 43But antitrust's application to such innovation has so far posed a host of practical and theoretical problems.

2. Antitrust Law in the Shadow of Patents

Antitrust has struggled where it collides with patent law. To resolve this tension, courts have sought to draw clear lines about when patent owners can legally exclude competition or, in the alternative, when antitrust law may condemn exclusionary acts. The key to defining antitrust's scope stems from the historical difficulties of identifying anticompetitive conduct regardless of patent rights.

Uncertainty has long prevailed over the types of practices that antitrust law bans. This is due to the broad text of the Sherman Antitrust Act (Sherman Act) which facially forbids vast swaths of acceptable activity. 44Section 1 bans every trade restraint, as in "every contract, [\*547] combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce," 45while Section 2 makes it illegal to "monopolize, or attempt to monopolize ... any part of the trade or commerce." 46The courts, in turn, have struggled to identify when the elimination of firms was due to anticompetitive practices or valid competition. 47

To resolve confusion, courts in the 1970s leaned on scholarship (notably, the "Chicago School" 48) to reinterpret and narrow antitrust law into its modern form: the "consumer welfare prescription." 49The movement's leaders asserted that antitrust's sole purpose is to foster competition for the benefit of consumers. 50Because consumers are primarily concerned about prices, quality, and innovation, modern antitrust may only condemn exclusionary practices that raised prices, diminished quality, eroded innovation, or rendered similar effects in a defined market. 51To violate antitrust law, the reduction of competition [\*548] must derive from an exclusionary act rather than the innovation of superior goods or other legitimate means. 52

Since the patent system grants the legal right to exclude competition, 53the consensus is that patent owners enjoy antitrust immunity so long as they act within their patent's scope. 54Examples of where a rightsholder exceeds its patent and thereby offends antitrust law include the tying of a non-patented item with a patented good (which extends one's patent to the non-patented item) 55and sham infringement litigation. 56However, when a rightsholder refuses to license a patent or charges fortunes to do so, courts have largely characterized these acts as squarely within one's exclusive rights. 57The principle is that a patent owner - or anyone else - owes no duty to help their rival. 58

Also informing this rule, antitrust enforcement might threaten innovation. A theory is that firms would tepidly invest in research and development (R&D) if they feared exercising their right to exclude. 59Along the same lines, it is thought that courts are ill-equipped to identify whether an act of innovation was meant to produce a superior good or, instead, suppress competition. 60Thus, for practical and policy reasons, the exploitation of patent rights has not typically been considered an exclusionary act. Undeterred, plaintiffs have sought to impose antitrust liability on patent holders under an array of theories, as explained next.