# 1NC --- Swing 2 R5

## OFF

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#### Increase – in number-means must be new prohibitions

Dictionary.com, no date

[“increase”, <http://www.dictionary.com/browse/increase>, accessed 9/8/16, GNL]

verb (used with object), increased, increasing. 1. to make greater, as in number, size, strength, or quality; augment; add to: to increase taxes. verb (used without object), increased, increasing. 2. to become greater, as in number, size, strength, or quality: Sales of automobiles increased last year. 3. to multiply by propagation. 4. to wax, as the moon. .

#### Prohibition – law forbidding action

Garner, Black’s Law Dictionary editor-in-chief, 16

[Bryan A., Black’s Law Dictionary, Fifth Pocket Edition, “prohibition”, p. 630]

prohibition. (15c) 1. A law or order than forbids a certain action.

#### ‘Prohibition’ must ban all instances of anticompetitive behavior

James Lane Buckley 91, Judge on the United States Court of Appeals for the District of Columbia Court, BA and JD from Yale University, Former Undersecretary for Security Assistance at the State Department, Former United States Senator from New York, “Hazardous Waste Treatment Council v. Reilly”, United States Court of Appeals for the District of Columbia Circuit, 938 F.2d 1390, 1395-1396, 1991 U.S. App. LEXIS 16095, 7/26/1991, Lexis

Petitioners claim that the EPA considers a state law to "act as a prohibition" under the regulation only when it bans all treatment, storage, and disposal within a State, and they point to the ALJ's statement, based on his reading of the preamble to the regulations, 45 Fed. Reg. at 33,395, that the EPA "appears to have construed the phrase 'act as a prohibition' in [paragraph (b)] as equivalent to an outright ban or refusal to accept hazardous waste for treatment, storage, or disposal." ALJ Decision at 112. Petitioners contend that the regulation must embrace any law that would even indirectly, as in the instant case, prohibit any treatment facility; otherwise, a State could accomplish a total ban one facility at a time. Senate Bill 114, they charge, epitomizes the "NIMBY" syndrome: In response to the needs of the nation for treatment of hazardous waste, North Carolina has simply said, "Not in my backyard." By refusing to respond, petitioners urge, the EPA ignores its duty to monitor state programs.

Although, at oral argument, government counsel [\*\*13] attempted to defend the "ban on all treatment" position that petitioners ascribe to the EPA, that is not the basis on which the agency concluded that Senate Bill 114 did not act as a prohibition within the meaning of section 271.4(b). In explaining why the second condition of paragraph (b) had not been met, the Regional Administrator emphasized that of the 485 riparian miles available in North Carolina for a facility of the kind proposed by GSX, 333 remained available under the Act, and noted that a smaller plant could be built at the Laurinburg site. Final Decision at 2. We therefore construe the EPA's decision to mean that a state law "acts as a prohibition" on the treatment of hazardous wastes when it effects a total ban on a particular waste treatment technology within a State, and nothing more.

[\*1396] Such a construction is reasonable and merits deference. The language of paragraph (b), which uses the word "prohibit[]" rather than "impede[]" or "restrict[]" as in the case of paragraph (a), suggests that the former allows States greater latitude in regulating particular treatment facilities before a prohibition is found to exist. This is consistent with the preamble's expression of [\*\*14] a desire to encourage the development of state programs by avoiding the establishment of "very tight standards." See 45 Fed. Reg. at 33,385. Second, defining prohibition in terms of the ban of a particular technology falls well within the language of paragraph (b). Finally, we see nothing inconsistent between this construction and the language of the underlying statute, 42 U.S.C. § 6926(b), which merely asserts that a state program may not be authorized if "such program is not consistent with the Federal and State programs applicable in other States." This language allows the agency enormous latitude in structuring its own implementing regulations and in interpreting them.

#### business practices are ongoing conduct defined by the behaviors of many market participants

Kerry Lynn Macintosh 97. Associate Professor of Law, Santa Clara University School of Law. B.A. 1978, Pomona College; J.D. 1982, Stanford University, “Liberty, Trade, and the Uniform Commercial Code: When Should Default Rules Be Based On Business Practices?,” 38 Wm. & Mary L. Rev. 1465, Lexis.

These new and revised articles reflect a strong trend toward choosing default rules 4 that codify existing business practices. 5 [FOOTNOTE 5 BEGINS] In this Article, the term "business practices" is used to refer to practices that emerge over time as countless market participants exercise their freedom to engage in profitable transactions. For an account of the evolution of business practices, see infra Part II. As used here, "business practices" is broader and less technical than "trade usage," which the Code narrowly defines as "any practice or method of dealing having such regularity of observance in a place, vocation, or trade as to justify an expectation that it will be observed with respect to the transaction in question." U.C.C. 1-205(2). [FOOTNOTE 5 ENDS] This is particularly true of the recent revisions to Articles 3 (Negotiable Instruments), 4 (Bank Deposits and Collections) and 5 (Letters of Credit).

#### Violation --- The plan does not prohibit a new business practice but rather only expands who can sue for violating those practices

#### Grounds and Limits --- Key to link uniqueness and a unidirectional topic --- too many possible standards makes the topic unmanagbly large

### 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

#### Topical affs cannot use court action ---

#### 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 fiats the courts

#### 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

#### Interpretation: the plan must specify how they expand the extraterritorial private right of action in the plan – failing to do so makes the aff a moving target and kills negative ground

#### Independently causes circumvention - the devil is in the details---Any vagueness will ensure failed enforcement and circumvention

Hanley, 21 (Daniel A. Hanley, a policy analyst at the Open Markets Institute., 4-6-2021, accessed on 8-10-2021, Slate, "How Antitrust Lost Its Bite", https://slate.com/technology/2021/04/antitrust-hearings-congress-legislation-bright-line-rules.html)//Babcii

History has consistently shown that only bright-line rules will lead to an effective and vigorous enforcement environment, as they do in other areas of law, and prevent the judiciary from favoring dominant economic enterprises and distorting the antitrust laws to preference increased concentration. The Supreme Court’s original development of the rule of reason and its subsequent gutting of the enforcement of the Clayton Act in the 1930s is particularly illustrative of why bright-line rules are necessary. A critical weakness of the Sherman Act when it was passed in 1890 was that it did not incorporate bright-line rules and left the interpretation of the act almost entirely to the judiciary. Despite its broad moral intentions, the first 15 years of its enforcement were anemic against concentrated private power and even [hostile to organized labor](https://escholarship.org/uc/item/8cj0z1tq). Eventually the federal government would obtain its first significant victory [in 1904](https://en.wikipedia.org/wiki/Northern_Securities_Co._v._United_States), but the legal standard that the court would use to determine the legality of antitrust violations was not fully decided until the 1911 Standard Oil case, in which the Supreme Court codified the rule of reason. [Standard Oil v. United States](https://en.wikipedia.org/wiki/Standard_Oil_Co._of_New_Jersey_v._United_States) is widely known for breaking up the company. However, the case was actually a pyrrhic victory for antitrust enforcers. In the case, the court created the foundation for the rule of reason by declaring that only “unreasonable” trade practices (known as restraints of trade) were illegal under the Sherman Act. In other words, the judiciary in Standard Oil anointed itself with unilateral discretionary power to manage and organize the economy and neutered the Sherman Act’s application. Outrage from Congress and the public over the judiciary’s seizure of power resulted in swift action. Less than three years later, Congress would try to reassert its position to ensure a deconcentrated marketplace with the Clayton Act. When Congress enacted the Clayton Act in 1914, its primary goal was to supplement the Sherman Act by bolstering a plaintiff’s ability to arrest certain enumerated conduct in its incipiency—to nip monopolistic behavior in the bud. The Clayton Act explicitly lessened the litigation burden on plaintiffs for certain exclusionary practices, including certain forms of tying (conditioning the purchase of a product on the purchase of another product), price discrimination, and exclusive dealing (contracts or coercive behavior that prevents suppliers or distributors from engaging with a firm’s rivals). Most importantly, Congress included in the Clayton Act a highly deferential and plaintiff-friendly legal standard meant to prohibit mergers (although only limited to acquisitions of assets and not for stock) that only “may be to substantially lessen competition” or “tend to create a monopoly.” The Clayton Act made clear that Congress was trying to arrest certain antitrust violations such as mergers as a means to grow corporate operations, and to reverse the Supreme Court’s declaration in [Standard Oil](https://en.wikipedia.org/wiki/Standard_Oil_Co._of_New_Jersey_v._United_States). However, the Supreme Court would instead successfully hijack this antitrust law too, in order to favor its own prescription for managing the economy. In a 1930 case known as [International Shoe](https://supreme.justia.com/cases/federal/us/280/291/), the Supreme Court decided to interpret the Clayton Act’s directive on mergers, despite its explicit purpose and statutory language, in an equivalent way to the Sherman Act. The court said the Clayton Act also deemed the indicator of an illegal merger to be whether it “injuriously affect[ed] the public”—yet again, a gutting of Congress’ intentions for a robust antitrust law. After the court’s holding in International Shoe, [almost no merger cases](https://heinonline.org/HOL/LandingPage?handle=hein.journals/antlervi3&div=6&id=&page=) were brought either by the Federal Trade Commission or the Department of Justice between 1930 and 1950. Even though the New Deal during the 1930s invigorated antitrust enforcement for violations of the Sherman Act targeting cartels and monopolies, it still took decades of advocacy for the Clayton Act to be significantly amended in 1950 to undo the Supreme Court’s damage. Even then, however, Congress did not impose a bright-line rule for mergers. And although the 1950 amendments to the Clayton Act did lead to vigorous enforcement, it would last only for another decade until the Supreme Court would, in a series of decisions, invent two doctrines, known as [antitrust injury](https://supreme.justia.com/cases/federal/us/479/104/) and [antitrust standing](https://supreme.justia.com/cases/federal/us/429/477/). These doctrines would again erode significant aspects of antitrust enforcement of both the Sherman Act and Clayton Act to the present day. The implementation of the consumer welfare framework since the 1970s is additional evidence from more than a century of consistent judicial mismanagement and hostility toward Congress’ desire to stop corporate concentration. Simply put, the courts cannot be trusted to adequately enforce antitrust laws without bright-line rules. If Congress is going to amend the antitrust laws to ensure they are effectively administered, rules that ban big mergers and the monopolization of markets, prohibit coercive contracts against small suppliers and distributors, and protect workers from dominant corporations must be imposed. Anything less leaves the door open for the judiciary to continue subverting Congress’ economic agenda, as dictated by the voting public, and instead substitute its own. Without bright-line rules, the current reform efforts will be in vain.

### OFF

#### The United States federal government ought to commission a binding Health Impact Assessment to evaluate whether the extraterritorial private right of action of its core antitrust laws ought to be expanded. The United States federal government ought to implement the recommendations.

#### The counterplan solves the aff but reinvigorates the process of utilizing HIAs

Hom et al 17 – \*MPH from Department of Health Services, School of Public Health, University of Washington. \*\*Affiliate Professor, Env. and Occ. Health Sciences, and Affiliate Professor, Urban Design and Planning, at the University of Washington. \*\*\*Clinical Professor, Health Services, and Clinical Professor, Env. and Occ. Health Sciences, at the University of Washington. \*\*\*\*Public Health, Seattle & King County. (\*Eva Hom, \*\*Andrew L. Dannenberg, \*\*\*Stephanie Farquhar & \*\*\*\*Lee Thornhill, 02/20/17, “A Systematic Review of Health Impact Assessments in the Criminal Justice System,” <https://link.springer.com/article/10.1007/s12103-017-9391-9#:~:text=Health%20impact%20assessments%20have%20potential,increasing%20equity%20and%20improving%20health>.)

Since the 1970s, our society has experienced a dramatic increase in criminal justice involvement and mass incarceration (Alexander, 2011; Dumont, Brockmann, Dickman, Alexander, & Rich, 2012; Golembeski & Fullilove, 2005). By 2014, the total incarcerated1 population in the United States reached 2,224,400; this does not include over 4.5 million individuals under community supervision 2 (U.S. Department of Justice et al., 2015). Involvement with the criminal justice system,3 whether accused, arrested, or convicted of a criminal act, can have prolonged impacts on many aspects of a person’s life – including health. For each of the over 6 million individuals who have experienced the criminal justice system, the health and social wellbeing of their friends, family, children, and neighbors are impacted as well (Table 1). As an increasing proportion of the population experiences incarceration, the ramifications for public health become more evident. Only recently has there been more collaborative efforts with the public health and criminal justice systems to address health issues at various points along the criminal justice continuum (Akers & Lanier, 2009; Carr, 2007; Hirshfield, 2004; Vaughn, DeLisi, Beaver, Perron, & Abdon, 2012; Vaughn, Salas-Wright, DeLisi, & Piquero, 2014). There are shared root causes of poor health and high incarceration such as lack of job opportunities, low-quality education, and residing in resource-deprived neighborhoods that need to be acknowledged and addressed by both fields (Braveman, Egerter, & Williams, 2011; Cloud, 2014; Graves, 2015). While burgeoning research reveals that historic and current criminal justice policies and practices have contributed to population health problems, the efforts to incorporate this knowledge into reformative solutions have lagged behind. The associations between criminal justice policies or programs and deleterious health outcomes may not always be apparent to decision makers or community members. Health impact assessments offer one approach to elucidate and address these associations. Health Impact Assessments A health impact assessment (HIA) is a systematic process or tool used by a wide range of groups such as governmental entities, non-profit organizations, or community organizations. It uses a combination of data, analytical methods, and stakeholder input to determine if a proposed policy, plan, program, or project will affect the public’s health and to form recommendations directed at policy planners and decision makers to monitor or mitigate those effects (Dannenberg & Wernham, 2012; Human Impact Partners, 2013b; National Research Council, 2011). The evolution of HIAs started with the environmental impacts assessment (EIA), a tool measuring anticipated effects on the environment of a proposed development or project. In the 1970s, EIAs became a requirement for major federal environmental projects and policies with the passing of the 1969 National Environmental Policy Act (NEPA) in the United States (Dannenberg & Wernham, 2012). Other countries followed with the adoption of their own EIA regulations. The public health community felt that the EIAs neglected to focus on human health impacts and independently worked on impact assessments that complimented EIAs on a proposed project or policy plan. This was also a time when the public health field began to recognize social determinants of health and apply an ecological view to understanding health challenges in other disciplines. HIAs have had a longer application in the construction of dams, airports, and transportation, but the social systems theory provided a theoretical basis for expanding the application to other settings like criminal justice (Morash, 1983). In criminal justice settings, impact assessments began as an evaluative process to identify inter-system effects and to modify programs for successful innovations (Morash & Anderson, 1977). The HIA process typically involves six steps: 1) screening (i.e. identifying proposed plans, policies, or projects where a HIA would be beneficial), 2) scoping (i.e. prioritizing health impacts to focus on), 3) assessing risks and benefits, 4) recommendations, 5) reporting results, and 6) monitoring and evaluation of HIA’s impact on the decision (Bhatia et al., 2014; HIP, 2013b; NRC, 2011) (Fig. 1). HIAs are most often conducted prospectively on a proposed policy or project where decision-makers are open to considering recommendations regarding health effects (Dannenberg, 2016). However, retrospective HIAs have also been conducted to revise or reevaluate an existing policy or project (Signal, Langford, Quigley, & Ward, 2006). HIAs can be initiated by a variety of organizations or groups including local, state, or tribal health departments, academic groups, and community-based organizations (Dannenberg et al., 2014). HIAs are well-established and standardized in Europe, Canada, Australia, and Thailand, most HIAs conducted in the past two decades have occurred in those countries. Most HIAs have been conducted in the transportation, housing or urban planning, and environmental sectors (Dannenberg & Wernham, 2012; NRC, 2011). Using HIAs to provide health-focused recommendations to decision makers has become more common in the United States, but are currently conducted on a voluntary basis with no requirements or legislative mandates (Bhatia & Corburn, 2011; Dannenberg & Wernham, 2012).

#### That’s key to stopping zoonotic diseases

USAID 12. “PROPOSED SUPPLEMENTAL GUIDANCE TO THE IFC’S INTRODUCTION TO HEALTH IMPACT ASSESSMENTS,” EPT Program: June 2012. https://www.usaid.gov/sites/default/files/documents/1864/Planning-Tool.pdf

Emerging Infectious Diseases and HIAs 1. Development Projects and Emerging Infectious Diseases Nearly three-quarters of emerging infectious diseases originate from wildlife. Three wild animal groups, which comprise approximately 70 percent of mammal species, are considered most likely to spread new infections to people: bats (Corona virus responsible for SARS and Marburg, Nipah and Rabies viruses), rodents (Lassa, hanta, and monkeypox viruses) and non-human primates (Ebola and yellow fever viruses). People contract these diseases by inhalation of aerosolized contaminated feces and urine, through direct contact via scratches, bites, and bodily fluids—such as blood and saliva— that can occur during hunting and food preparation, and by ingesting contaminated food, water, or undercooked meat. Disease emergence is dynamic, and is influenced by ecological, biological, and social factors. Factors that influence disease dynamics and increase the likelihood of disease emergence include: • High population density (human or animal) • Movement of human and animal populations • Changes in land use (e.g. from forest to agriculture) • Pathogen adaptation and evolution • Presence and mobility of vectors • Behavior changes leading to increased potential for human-animal interaction/exposure • Climate change. Industry activities can contribute to disease emergence. These activities include, but are not limited to: • Deforestation • Road and corridor development • Temporary labor camps and other facilities • Expansion of surrounding local communities and agriculture • Project-induced migration. These activities bring people to previously wild areas and can fragment wildlife habitat and reduce biodiversity, which can alter the distribution and abundance of wildlife and their associated pathogens, and amplify the risk of pathogen “spillover” into new populations. Increasing contact between people, domestic animal (e.g. livestock), and wildlife populations increases the likelihood of spillover and disease transmission between species. All animal species can carry zoonotic diseases. As habitats fragment and people enter previously undeveloped areas, wildlife species will seek alternate food and shelter that will bring them into closer contact with people. Wildlife may become a nuisance or pest and take advantage of the new food sources and habitats created at construction camps, canteens, and villages. As a result, animals come in closer contact with people, potentially increasing human exposure to disease. Other animals raid crops in fields that border their habitat, invade labor camps and homes, become violent, or eat infected animals. As more people populate a previously undeveloped area, hunting pressure often increases. Agriculture may be introduced or intensified. These factors lead to increased potential for interaction between wildlife and people. These interactions may also be exacerbated by growing human populations that can stress local health care, water, food, and waste management infrastructures. In turn, stressed systems are more likely to break down, creating ideal conditions for increased disease transmission and emergence. Table 1 summarizes some health impact issues that can increase the potential of zoonotic disease transmission. 2. Emerging Infectious Diseases and Impact Assessments The International Finance Corporation (IFC), International Council of Mining and Minerals (ICMM), and IPIECA, the global oil and gas industry association for environmental and social issues, have procedures to conduct a Health Impact Assessment. Although these guidelines include veterinary and zoonotic diseases, they emphasize vector-borne diseases and diseases of livestock and domestic animals. This document provides the steps to incorporate emerging infectious diseases of zoonotic origin into a health impact assessment. 3. Screening Impact assessment procedures involve two initial phases: Screening and Scoping. Screening determines what policies and projects are selected for ESHIAs, and are usually rapid in-house evaluations by trained assessors investigating local contexts using set criteria (e.g. location, climate, endemic disease, etc.). Because Screening determines the range and extent of all subsequent impact assessment activities, understanding the local endemic diseases with zoonotic potential is essential. The following screening checklist seeks to identify whether the proposed/existing project is in an area with potential for zoonotic disease transmission and to identify if there will be/are activities that might exacerbate the risk of transmission. If you have answered yes to question 1 and two other questions, then it is worthwhile to further examine the potential of emerging infectious diseases for your project area. 4. Scoping Scoping, the second phase of an assessment, sets the scale for the assessment, determines how key issues identified in the screening process are addressed, and what resources will be available and allocated for further investigation. During the Scoping process, the range and types of hazards, geographic setting, timescale, and population boundaries are determined to assess impacts. The activities to be evaluated and the populations to be considered for each phase of the project are identified. In addition, the potential for cumulative and/or residual impacts is determined.

### OFF

#### God is dead, order never was and absurdity cannot be escaped – The aff is not revolutionary, new and it does not bring god into existence. The only question left is why vote aff for goals when you could vote neg for struggle?

Camus 42 Albert Camus was a French philosopher, author, and journalist. He won the Nobel Prize in Literature at the age of 44 in 1957, the second-youngest recipient in history. “Albert Camus: The Myth of Sisyphus” (<http://schmieder.fmp-berlin.info/collectibles/pdf/sisyphos_eng.pdf)//MVBB>

The gods had condemned Sisyphus to ceaselessly rolling a rock to the top of a mountain, whence the stone would fall back of its own weight. They had thought with some reason that there is no more dreadful punishment than futile and hopeless labor. If one believes Homer, Sisyphus was the wisest and most prudent of mortals. According to another tradition, however, he was disposed to practice the profession of highwayman. I see no contradiction in this. Opinions differ as to the reasons why he became the futile laborer of the underworld. To begin with, he is accused of a certain levity in regard to the gods. He stole their secrets. Egina, the daughter of Esopus, was carried off by Jupiter. The father was shocked by that disappearance and complained to Sisyphus. He, who knew of the abduction, offered to tell about it on condition that Esopus would give water to the citadel of Corinth. To the celestial thunderbolts he preferred the benediction of water. He was punished for this in the underworld. Homer tells us also that Sisyphus had put Death in chains. Pluto could not endure the sight of his deserted, silent empire. He dispatched the god of war, who liberated Death from the hands of her conqueror. It is said that Sisyphus, being near to death, rashly wanted to test his wife's love. He ordered her to cast his unburied body into the middle of the public square. Sisyphus woke up in the underworld. And there, annoyed by an obedience so contrary to human love, he obtained from Pluto permission to return to earth in order to chastise his wife. But when he had seen again the face of this world, enjoyed water and sun, warm stones and the sea, he no longer wanted to go back to the infernal darkness. Recalls, signs of anger, warnings were of no avail. Many years more he lived facing the curve of the gulf, the sparkling sea, and the smiles of earth. A decree of the gods was necessary. Mercury came and seized the impudent man by the collar and, snatching him from his joys, lead him forcibly back to the underworld, where his rock was ready for him. You have already grasped that Sisyphus is the absurd hero. He is, as much through his passions as through his torture. His scorn of the gods, his hatred of death, and his passion for life won him that unspeakable penalty in which the whole being is exerted toward accomplishing nothing. This is the price that must be paid for the passions of this earth. Nothing is told us about Sisyphus in the underworld. Myths are made for the imagination to breathe life into them. As for this myth, one sees merely the whole effort of a body straining to raise the huge stone, to roll it, and push it up a slope a hundred times over; one sees the face screwed up, the cheek tight against the stone, the shoulder bracing the clay-covered mass, the foot wedging it, the fresh start with arms outstretched, the wholly human security of two earth-clotted hands. At the very end of his long effort measured by skyless space and time without depth, the purpose is achieved. Then Sisyphus watches the stone rush down in a few moments toward tlower world whence he will have to push it up again toward the summit. He goes back down to the plain. It is during that return, that pause, that Sisyphus interests me. A face that toils so close to stones is already stone itself! I see that man going back down with a heavy yet measured step toward the torment of which he will never know the end. That hour like a breathing-space which returns as surely as his suffering, that is the hour of consciousness. At each of those moments when he leaves the heights and gradually sinks toward the lairs of the gods, he is superior to his fate. He is stronger than his rock. If this myth is tragic, that is because its hero is conscious. Where would his torture be, indeed, if at every step the hope of succeeding upheld him? The workman of today works everyday in his life at the same tasks, and his fate is no less absurd. But it is tragic only at the rare moments when it becomes conscious. Sisyphus, proletarian of the gods, powerless and rebellious, knows the whole extent of his wretched condition: it is what he thinks of during his descent. The lucidity that was to constitute his torture at the same time crowns his victory. There is no fate that can not be surmounted by scorn. If the descent is thus sometimes performed in sorrow, it can also take place in joy. This word is not too much. Again I fancy Sisyphus returning toward his rock, and the sorrow was in the beginning. When the images of earth cling too tightly to memory, when the call of happiness becomes too insistent, it happens that melancholy arises in man's heart: this is the rock's victory, this is the rock itself. The boundless grief is too heavy to bear. These are our nights of Gethsemane. But crushing truths perish from being acknowledged. Thus, Edipus at the outset obeys fate without knowing it. But from the moment he knows, his tragedy begins. Yet at the same moment, blind and desperate, he realizes that the only bond linking him to the world is the cool hand of a girl. Then a tremendous remark rings out: "Despite so many ordeals, my advanced age and the nobility of my soul make me conclude that all is well." Sophocles' Edipus, like Dostoevsky's Kirilov, thus gives the recipe for the absurd victory. Ancient wisdom confirms modern heroism. One does not discover the absurd without being tempted to write a manual of happiness. "What!---by such narrow ways--?" There is but one world, however. Happiness and the absurd are two sons of the same earth. They are inseparable. It would be a mistake to say that happiness necessarily springs from the absurd. Discovery. It happens as well that the felling of the absurd springs from happiness. "I conclude that all is well," says Edipus, and that remark is sacred. It echoes in the wild and limited universe of man. It teaches that all is not, has not been, exhausted. It drives out of this world a god who had come into it with dissatisfaction and a preference for futile suffering. It makes of fate a human matter, which must be settled among men. All Sisyphus' silent joy is contained therein. His fate belongs to him. His rock is a thing. Likewise, the absurd man, when he contemplates his torment, silences all the idols. In the universe suddenly restored to its silence, the myriad wondering little voices of the earth rise up. Unconscious, secret calls, invitations from all the faces, they are the necessary reverse and price of victory. There is no sun without shadow, and it is essential to know the night. The absurd man says yes and his efforts will henceforth be unceasing. If there is a personal fate, there is no higher destiny, or at least there is, but one which he concludes is inevitable and despicable. For the rest, he knows himself to be the master of his days. At that subtle moment when man glances backward over his life, Sisyphus returning toward his rock, in that slight pivoting he contemplates that series of unrelated actions which become his fate, created by him, combined under his memory's eye and soon sealed by his death. Thus, convinced of the wholly human origin of all that is human, a blind man eager to see who knows that the night has no end, he is still on the go. The rock is still rolling. I leave Sisyphus at the foot of the mountain! One always finds one's burden again. But Sisyphus teaches the higher fidelity that negates the gods and raises rocks. He too concludes that all is well. This universe henceforth without a master seems to him neither sterile nor futile. Each atom of that stone, each mineral flake of that night filled mountain, in itself forms a world. The struggle itself toward the heights is enough to fill a man's heart. One must imagine Sisyphus happy.

### OFF

#### The United States federal government should send a vast number of extraterrestrial missions to deliver the chemical capacity for life to other planetary bodies

#### The CP is Protospermia and solves life on other planets, avoids solving extinction, and creates non-human based life which avoids human-like tech developments

**Kaçar, 20** ([Betül Kaçar](https://aeon.co/users/betul-kacar) , an assistant professor at the University of Arizona and a NASA Early Career Faculty Award recipient. She is the director of the NASA Astrobiology Consortium [MUSE](http://muse.arizona.edu/), , 11-20-2020, accessed on 5-14-2021, Aeon, "If we’re alone in the Universe, should we do anything about it? – Betül Kaçar | Aeon Essays", https://aeon.co/essays/if-were-alone-in-the-universe-should-we-do-anything-about-it)//babcii

The pursuit of solving the particular problem of the origins of life on Earth can help solve the more generic problem of understanding the origins of any life, anywhere, anytime. With such knowledge, it might be possible to eventually ‘fill in the gap’ between natural processes linking geochemistry and biogenicity on many different worlds. If astrobiologists could physicochemically assess what ingredients might enable many planets to generate their own forms of life that were ‘of’ that planet, it might bring forth life where and how it wouldn’t otherwise have existed. We would deliver a starting point, but the unfolding trajectory of this chemical system won’t be directed, it will be self-directed and self-organised. What occurs next will result from the coevolution between the chemical goo and the planetary body itself – a solution that is unrelated to our biology, and specific to that planetary system. Sending the chemical capacity for life to emerge on another planetary body is what I call protospermia. This differs from terraforming, which involves altering an existing environment to make it suitable for a particular form of life. Finally, panspermia delivers one particular form of life to an existing environment such that it might or might not eventually take root on its own. These methods all involve relocating existing life forms to another planet, one way or another. Protospermia is different. It doesn’t require ploughing over whatever living or nonliving chemical systems were already present at the destination. With protospermia, whatever arises after we provide a nudge toward biogenesis would be just as much a product of that environment as our life is of Earth. Whatever arises after we provide a nudge might (or might not) look anything like Earth life. It would be unique and ‘of’ that destination body as much as its rocks on the ground and the gasses in its atmosphere.

## Case

### 1NC --- Presumption

#### Zeno’s paradox---market activity won’t happen because motion is impossible

SEP 19 (Stanford Encyclopedia of Philosophy, <https://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=paradox-zeno>,)

The first asserts the non-existence of motion on the ground that that which is in locomotion must arrive at the half-way stage before it arrives at the goal. (Aristotle Physics, 239b11) This paradox is known as the ‘dichotomy’ because it involves repeated division into two (like the second paradox of plurality). Like the other paradoxes of motion we have it from Aristotle, who sought to refute it. Suppose a very fast runner—such as mythical Atalanta—needs to run for the bus. Clearly before she reaches the bus stop she must run half-way, as Aristotle says. There’s no problem there; supposing a constant motion it will take her 1/2 the time to run half-way there and 1/2 the time to run the rest of the way. Now she must also run half-way to the half-way point—i.e., a 1/4 of the total distance—before she reaches the half-way point, but again she is left with a finite number of finite lengths to run, and plenty of time to do it. And before she reaches 1/4 of the way she must reach 1/21/2 of 1/4=1/81/4=1/8 of the way; and before that a 1/16; and so on. There is no problem at any finite point in this series, but what if the halving is carried out infinitely many times? The resulting series contains no first distance to run, for any possible first distance could be divided in half, and hence would not be first after all. However it does contain a final distance, namely 1/2 of the way; and a penultimate distance, 1/4 of the way; and a third to last distance, 1/8 of the way; and so on. Thus the series of distances that Atalanta is required to run is: …, then 1/16 of the way, then 1/8 of the way, then 1/4 of the way, and finally 1/2 of the way (for now we are not suggesting that she stops at the end of each segment and then starts running at the beginning of the next—we are thinking of her continuous run being composed of such parts). And now there is a problem, for this description of her run has her travelling an infinite number of finite distances, which, Zeno would have us conclude, must take an infinite time, which is to say it is never completed. And since the argument does not depend on the distance or who or what the mover is, it follows that no finite distance can ever be traveled, which is to say that all motion is impossible. (Note that the paradox could easily be generated in the other direction so that Atalanta must first run half way, then half the remaining way, then half of that and so on, so that she must run the following endless sequence of fractions of the total distance: 1/2, then 1/4, then 1/8, then ….) A couple of common responses are not adequate. One might—as Simplicius ((a) On Aristotle’s Physics, 1012.22) tells us Diogenes the Cynic did by silently standing and walking—point out that it is a matter of the most common experience that things in fact do move, and that we know very well that Atalanta would have no trouble reaching her bus stop. But this would not impress Zeno, who, as a paid up Parmenidean, held that many things are not as they appear: it may appear that Diogenes is walking or that Atalanta is running, but appearances can be deceptive and surely we have a logical proof that they are in fact not moving at all. Alternatively if one doesn’t accept that Zeno has given a proof that motion is illusory—as we hopefully do not—one then owes an account of what is wrong with his argument: he has given reasons why motion is impossible, and so an adequate response must show why those reasons are not sufficient. And it won’t do simply to point out that there are some ways of cutting up Atalanta’s run—into just two halves, say—in which there is no problem. For if you accept all of the steps in Zeno’s argument then you must accept his conclusion (assuming that he has reasoned in a logically deductive way): it’s not enough to show an unproblematic division, you must also show why the given division is unproblematic.

#### Cause and effect are synonyms and impossible --- Impossible to know if the aff solves anything

Empiricus 200 A.D. (Sextus Empiricus was a [Pyrrhonist](https://en.wikipedia.org/wiki/Pyrrhonism) [philosopher](https://en.wikipedia.org/wiki/Philosopher) and a [physician](https://en.wikipedia.org/wiki/Physician). His philosophical works are the most complete surviving account of ancient Greek and Roman Pyrrhonism, and because of the arguments they contain against the other [Hellenistic philosophies](https://en.wikipedia.org/wiki/Hellenistic_philosophy) they are also a major source of information about those philosophies. “Outlines of Skepticism” p. 148-149)

That it is also plausible to say that nothing is a cause of anything will be evident when we have set out for the present a few of the many arguments which suggest this. Thus, it is impossible to conceive of a cause before apprehending its effect as an effect of it; for we recognize that it is a cause of its effect only when we apprehend the latter as an effect. But we cannot apprehend the effect of a cause as its effect if we have not apprehended the cause of the effect as its cause; for we think that we know that it is its effect only when we have apprehended its cause as a cause of it. Thus if, in order to conceive of a cause, we must already have recognized its effect, and in order to know its effect as I have said, we must already know the cause, the reciprocal mode of puzzlement shows that both are inconceivable: the cause cannot be conceived of as a cause nor the effect as an effect; for each of them needs to be made convincing by the other, and we shall not know from which to begin to form the concept. Hence we shall not be able to assert that anything is a cause of anything. To concede that it is possible to conceive of causes, they will be deemed to be inapprehensible because of the dispute. For some say that some things are causes of others, some say that they are not, and some have suspended judgment. Anyone therefore, who says that some things are causes of others either states that he says this simply and impelled by no reasonable cause or else will say that he came to give assent to this because of certain causes. If simply, then he will not be more convincing than someone who says simply that nothing is a cause of anything; and if he states causes because of which he deems that some things are causes of others, then he will be attempting to establish the matter under investigation by way of the matter under investigation - for we are investigating whether anything is a cause of anything, and he says, as though there were causes, that there is a cause of there being causes. Again, since we are investigating the reality of causes, he will have to provide a cause for the cause of there being causes - and another for that, and so ad infinitum. But it is impossible to provide infinitely many causes. Therefore, it is impossible to assert firmly that anything is a cause of anything.

### 1NC --- Turn

Turn --- Vacuum Decay

#### Every current experiment, the CERN’s discovery of the Higgs Boson, and measurements of quark masses confirm we are living in a False (also called metastable) Vacuum

Markkanen et al., 18 (Tommi Markkanen, Arttu Rajantie, and Stephen Stopyra, Department of Physics, Imperial College London, London, United Kingdom --- Department of Physics and Astronomy, University College London, London, United Kingdom, 12-18-2018, accessed on 4-28-2021, Frontiers, "Cosmological Aspects of Higgs Vacuum Metastability", <https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full)//Babcii>

The current central experimental values of the parameters of the Standard Model give rise to a striking conclusion: metastability of the electroweak vacuum is favored over absolute stability. A metastable vacuum for the Higgs boson implies that it is possible, and in fact inevitable, that a vacuum decay takes place with catastrophic consequences for the Universe. The metastability of the Higgs vacuum is especially significant for cosmology, because there are many mechanisms that could have triggered the decay of the electroweak vacuum in the early Universe. We present a comprehensive review of the implications from Higgs vacuum metastability for cosmology along with a pedagogical discussion of the related theoretical topics, including renormalization group improvement, quantum field theory in curved spacetime and vacuum decay in field theory.

1. Introduction

One of the most striking results of the discovery of Higgs boson ([Aad et al., 2012](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B1); [Chatrchyan et al., 2012](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B57)) has been that its mass lies in a regime that predicts the current vacuum state to be a false vacuum, that is, there is a lower energy vacuum state available to which the electroweak vacuum can decay into ([Degrassi et al., 2012](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B79); [Buttazzo et al., 2013](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B46)). That this was a possibility in the Standard Model (SM) has been known for a long time ([Hung, 1979](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B154); [Sher, 1993](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B237); [Casas et al., 1996](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B54); [Isidori et al., 2001](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B155); [Ellis et al., 2009](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B95); [Elias-Miro et al., 2012](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B89)). The precise behavior of the Higgs potential is sensitive to the experimental inputs, in particular the physical masses for the Higgs and the top quark and also physics beyond the SM. The current best estimates of the Higgs and top quark masses ([Tanabashi et al., 2018](https://www.frontiersin.org/articles/10.3389/fspas.2018.00040/full#B245)),

Mh=125.18±0.16 GeV, Mt=173.1±0.9 GeV,    (1.1)Mh=125.18±0.16 GeV, Mt=173.1±0.9 GeV,    (1.1)

place the Standard Model squarely in the metastable region.

#### The newest experiments confirm the standard model --- The Higgs Boson was confirmed to decay into muons (Second-generation particles)

**CIT, 20** (California Institute of Technology, The California Institute of Technology (Caltech)[7] is a private research university in Pasadena, California. The university is known for its strength in science and engineering, and is one among a small group of institutes of technology in the United States which is primarily devoted to the instruction of pure and applied sciences., 10-11-2020, accessed on 4-28-2021, SciTechDaily, "Extremely Rare Higgs Boson Decay Process Spotted at the Large Hadron Collider", <https://scitechdaily.com/extremely-rare-higgs-boson-decay-process-spotted-at-the-large-hadron-collider/)//Babcii>

This summer, for the first time, particle physicists using data collected by the experiment known as the Compact Muon Solenoid (CMS) at the LHC, have found evidence that the Higgs boson decays into a pair of elementary particles called muons. The muon is a heavier version of the electron, and both muons and electrons belong to a class of particles known as fermions, as described in the widely accepted model of particles called the Standard Model. The Standard Model classifies all particles as either fermions or bosons. Generally, fermions are building blocks of all matter, and bosons are the force carriers.

A muon is also what is known as a second-generation particle. First-generation fermion particles such as electrons are the lightest of particles; second- and third-generation particles can decay to become first-generation particles. The new finding represents the first evidence that the Higgs boson interacts with second-generation fermions.

In addition, this result provides further evidence that the decay rate of the Higgs to fermion pairs is proportional to the square of the mass of the fermion. This is a key prediction of the Higgs theory. With more data, the LHC experiments are expected to confirm that indeed the Higgs gives the fundamental particles their mass.

“The importance of this measurement is that we are probing rare processes involving the Higgs boson, and we are in the precision Higgs physics investigation regime where any departure from the Standard Model predictions can point us to new physics,” says Maria Spiropulu, the Shang-Yi Ch’en Professor of Physics at Caltech.

Scientists analyzing data from another instrument at the LHC, known as ATLAS (A Toroidal LHC ApparatuS), also found corroborating evidence for the Higgs boson decaying into muons. The results from both experiments were presented at the 40th International Conference on High Energy Physics in August 2020.

#### The only way to cause a phase shift (vacuum decay) is new physics developments

\* This also answers, “Quantum tunneling” and “Particle collisions” thump

**Dattaro, 14** (Laura Dattaro, 2014, accessed on 4-28-2021, Popular Mechanics, "What Stephen Hawking Really Said About Destroying the Universe", https://www.popularmechanics.com/science/a11217/what-stephen-hawking-really-said-about-destroying-the-universe-17192502/)//Babcii

Once physicists began to close in on the mass of the Higgs boson, they were able to work out the Higgs potential. That value seemed to reveal that the universe exists in what's known as a meta-stable vacuum state, or false vacuum, a state that's stable for now but could slip into the "true" vacuum at any time. This is the catastrophic vacuum decay in Hawking's warning, though he is not the first to posit the idea. Is he right? "There are a couple of really good reasons to think that's not the end of the story," Mack says. There are two ways for a meta-stable state to fall off into the true vacuum—one classical way, and one quantum way. The first would occur via a huge energy boost, the 100 billion GeVs Hawking mentions. But, Mack says, the universe already experienced such high energies during the period of inflation just after the big bang. Particles in cosmic rays from space also regularly collide with these kinds of high energies, and yet the vacuum hasn't collapsed (otherwise, we wouldn't be here). "Imagine that somebody hands you a piece of paper and says, 'This piece of paper has the potential to spontaneously combust,' and so you might be worried," Mack says. "But then they tell you 20 years ago it was in a furnace." If it didn't combust in the furnace, it's not likely to combust sitting in your hand. Of course, there's always the quantum world to consider, and that's where things always get weirder. In the quantum world, where the smallest of particles interact, it's possible for a particle on one side of a barrier to suddenly appear on the other side of the barrier without actually going through it, a phenomenon known as quantum tunneling. If our universe was in fact in a meta-stable state, it could quantum tunnel through the barrier to the vacuum on the other side with no warning, destroying everything in an instant. And while that is theoretically possible, predictions show that if it were to happen, it's not likely for billions of billions of years. By then, the sun and Earth and you and I and Stephen Hawking will be a distant memory, so it's probably not worth losing sleep over it. What's more likely, Mack says, is that there is some new physics not yet understood that makes our vacuum stable. Physicists know there are parts of the model missing; mysteries like quantum gravity and dark matter that still defy explanation. When two physicists published a paper documenting the Higgs potential conundrum in March, their conclusion was that an explanation lies beyond the Standard Model, not that the universe may collapse at any time.

#### Those physics developments are inevitable absent a wipeout --- The first is sub-quatum weapons

Bekkum, 4 (Gary Bekkum, Founder of Spacetime Threat Assessment Report Research, Founder of STARstream Research, Futurist,, 5-11-2004, accessed on 4-28-2021, Pravda English, "American military is pursuing new types of exotic weapons", https://english.pravda.ru/science/5527-weapons/)//Babcii

Cook was intrigued when I pointed out the apparent connections between various private investors, defense contractors, NASA, INSCOM (American military intelligence), and the CIA. researching exotic propulsion technologies Cook had heard rumors of a new kind of weapon, a "sub-quantum atomic bomb"**,** being whispered about in what he called the "dark halls" of defense research. Sub-quantum physics is a controversial re-interpretation of quantum theory, based on so-called pilot wave theories, where an information field controls quantum particles. The late Professor David Bohm showed that the predictions of ordinary quantum mechanics could be recast into a pilot wave information theory. Recently Anthony Valentini of the Perimeter Institute has suggested that ordinary quantum theory may be a special case of pilot wave theories, leaving open the possibility of new and exotic non-quantum technologies. Some French, Serbian and Ukrainian physicists have been working on new theories of extended electrons and solitons, so perhaps a sub-quantum bomb is not entirely out of the question. Even if the rumors of a sub-quantum bomb are pure fantasy, there is no question that mainstream physicists seriously contemplate a phase transition in the quantum vacuum as a real possibility. The quantum vacuum defies common sense, because empty space in quantum field theory is actually filled with virtual particles. These virtual particles appear and disappear far too quickly to be detected directly, but their existence has been confirmed by experiments that demonstrate their influence on ordinary matter. "Such research should be forbidden!" In the early 1970's Soviet physicists were concerned that the vacuum of our universe was only one possible state of empty space. The fundamental state of empty space is called the "true vacuum". Our universe was thought to reside in a "false vacuum", protected from the true vacuum by "the wall of our world". A change from one vacuum state to another is known as a phase transition. This is analogous to the transition between frozen and liquid water. Lev Okun, a Russian physicist and historian recalls Andrei Sakharov, the father of the Soviet hydrogen bomb, expressing his concern about research into the phase transitions of the vacuum. If the wall between vacuum states was to be breached, calculations showed that an unstoppable expanding bubble would continue to grow until it destroyed our entire universe! Sakharov declared that "Such research should be forbidden!" According to Okun, Sakharov feared that an experiment might accidentally trigger a vacuum phase transition**.**

#### The second is vacuum energy exploitation

Folger, 8 (Tim Folger, Contributing Editor at Discover Magazine, Writer for National Geographic, MA in Journalism from New York University, BA in Physics from UC Santa Cruz, 7-18-2008, accessed on 4-28-2021, Discover Magazine, "Nothingness of Space Could Illuminate the Theory of Everything", https://www.discovermagazine.com/the-sciences/nothingness-of-space-could-illuminate-the-theory-of-everything)//Babcii

When the next revolution rocks physics, chances are it will be about nothing—the vacuum, that endless infinite void. In a discipline where the stretching of time and the warping of space are routine working assumptions, the vacuum remains a sort of cosmic koan. And as in the rest of physics, its nature has turned out to be mind-bendingly weird: Empty space is not really empty because nothing contains something, seething with energy and particles that flit into and out of existence. Physicists have known that much for decades, ever since the birth of quantum mechanics. But only in the last 10 years has the vacuum taken center stage as a font of confounding mysteries like the nature of dark energy and matter; only recently has the void turned into a tantalizing beacon for cranks. As one blond celebrity heiress and embodiment of emptiness might say, nothing is hot. To investigate the mysteries of the void, some physicists are using the biggest scientific instrument ever built—the just-completed Large Hadron Collider, a huge particle accelerator straddling the French-Swiss border. Others are designing tabletop experiments to see if they can plumb the vacuum for ways to power strange new nanotech devices. “The vacuum is one of the places where our knowledge fizzles out and we’re left with all sorts of crazy-sounding ideas,” says John Baez, a mathematical physicist at the University of California at Riverside. Whether in the visionary search for the engine of cosmic expansion or the near-fruitless quest for perpetual free energy, the vacuum is where it’s happening. By mining the vacuum’s riches, a true theory of everything may yet emerge. Empty space wasn’t always so mystifying. Until the 1920s physicists viewed the vacuum much as the rest of us still do: as a featureless nothingness, a true void. That all changed with the birth of quantum mechanics. According to that theory, the space around a particle is filled with countless “virtual” particles rapidly bursting into and out of existence like an invisible fireworks display. Those virtual quantum particles are more than a theoretical abstraction. Sixty years ago a Dutch physicist named Hendrik Casimir suggested a simple experiment to show that virtual particles can move objects in the real world. What would happen, he asked, to two metal plates placed very close together in a complete vacuum? In the days before quantum mechanics, physicists would have said that the plates would just sit there. But Casimir realized that the net pressure of all the virtual particles—the stuff of empty space—outside the plates should exert a minuscule force, a nudge from nothing that would push the plates together. Physicists tried for decades to measure the Casimir force with great precision, but it wasn’t until 1997 that technology caught up with theory. In that year, physicist Steve Lamoreaux, now at Yale, managed to detect the feeble Casimir force on two small surfaces separated by a few thousandths of a millimeter. Its strength was about equal to the force that would be exerted against the palm of one’s hand by the weight of a single red blood cell. At first most physicists regarded the Casimir force as a quantum oddity, something of no practical value. Now that has changed: Forward thinkers see it as an important energizer for the tiniest of machines, devices on the nano scale, and a few labs are working on ways to use the force to defy the conventional limitations of mechanical design. Federico Capasso, a physicist at Harvard, leads a small team that is trying to create a repulsive Casimir force by tinkering with the shapes of plates or with the coatings used to cover them. His entire set of experiments fits on a desktop, and the objects he works with are so small that most of them cannot be seen without a microscope. “Once you have a repulsive force between two plates, you should be able to eliminate static friction,” Capasso says. That could lead to a host of useful applications, including tiny frictionless bearings or nanogears that spin without touching. “But the experiments are enormously difficult, so I cannot tell you when and how.” For all its strangeness, the Casimir force may be the one property of empty space that does not baffle today’s physicists. It is garden-variety quantum mechanics, weird but not unexpected. The same can’t be said about dark energy, a truly astonishing discovery made by astronomers a decade ago while observing distant exploding stars. The explosions revealed a universe expanding at an ever-faster rate, a finding at odds with previous expectations that the expansion of the cosmos should be slowing down, braked by the collective gravitational pull of all the matter out there. Some unknown form of energy—physicists call it dark energy simply for lack of a more descriptive term—appears to be built into the very fabric of space, countering the gravitational pull of matter and pushing everything in the universe apart. Some theorists speculate that dark energy might cause a runaway expansion of the universe, resulting in a so-called Big Rip some 50 billion years from now that would tear the cosmos to pieces, shredding even atoms. The observations have allowed physicists to estimate the quantity of dark energy by deducing the force needed to produce the accelerating effect. The result is a minuscule amount of energy for every cubic meter of vacuum. Since most of the cosmos consists of empty space, though, that little bit adds up, and the total amount of dark energy completely dominates the dynamics of the universe. With the discovery of dark energy came difficult questions: What is this energy, and where does it come from? Physicists simply do not know. According to quantum mechanics, the energy of empty space comes from the virtual particles that dwell there. But when physicists use the equations of quantum theory to calculate the amount of that virtual energy, they get a ridiculously huge number—about 120 orders of magnitude too large. That much energy would literally blow the universe apart: Objects a few inches from us would be carried away to astronomical distances; the universe would literally double in size every 10-43 second, and it would keep doubling at that rate until all the vacuum energy was gone. This may be the most colossal gap between observation and theory in the history of science. And it means that physicists are missing something fundamental about the way the universe works. “We’ve made a prediction on the basis of our best theories, and it is wrong, wildly wrong,” says Sean Carroll, a theoretical physicist at the California Institute of Technology. “That means we don’t just tweak a parameter here and there; we really have to think deeply about what our theories are.” Even if no one knows where the energy of empty space comes from or why it has the value it does, there is now no doubt that it exists. And if there is energy to be had, there is inevitably somebody out there thinking of how to exploit it. The notion of limitless energy from empty space has inspired legions of wannabe physicists who dream of developing the ultimate perpetual-motion device, a machine that would solve the world’s energy problems forever. A quick Internet search for the words free energy and vacuum turns up pages and pages of schemes for tapping the vacuum’s energy. I ask John Baez if such efforts are as hopeless as previous perpetual-motion machines. Are they equally crazy and doomed to failure? “Perhaps not as doomed as trying to prove the world is flat,” Baez says. “One thing I can say is that I sure hope it doesn’t work, because if you could extract energy from the vacuum, it would mean that the vacuum is not stable. For normal physicists,” he adds with a laugh, “the definition of the vacuum is that it’s the lowest-energy situation possible—it has less energy than anything else.” In short, Baez says, while we may be able to get energy from the vacuum, success “would mean the universe is far more unstable than we ever dreamed.” The reasoning goes like this: If the vacuum is not at the lowest energy state possible, then at some point in the future, the vacuum could fall to a lower state, pulsing out energy that would threaten the very structure of the cosmos**.** If some clever engineer were ever to extract energy from the vacuum, it could set off a chain reaction that would spread at the speed of light and destroy the universe. Free energy, yes, but not what the inventors had in mind.

#### The third is quantum observation of the universe

Brooks 15 (Michael Brooks, who holds a PhD in quantum physics, is an author, journalist and broadcaster. He is a consultant at New Scientist, a magazine with over three quarters of a million readers worldwide,and writes a weekly column for the New Statesman. He is the author of At The Edge of Uncertainty, The Secret Anarchy of Science and the bestselling non-fiction title 13 Things That Don't Make Sense. His writing has also appeared in the Guardian, the Independent, the Observer, the Times Higher Education, the Philadelphia Inquirer and many other newspapers and magazines. He has lectured at various places, including New York University, The American Museum of Natural History and Cambridge University. “Human Universe,” New Scientist, 02624079, 5/2/2015, Vol. 226, Issue 3019)

With great power comes great responsibility. As our grip on Earth grows ever tighter, so does the possibility that we could destroy it, or at least ourselves. But the prospect pales into insignificance when you consider that we may have the power to do something even worse. We could destroy the universe**.** Remember the outcry when CERN was getting ready to start smashing particles together in its Large Hadron Collider? A few doomsayers warned that it might be opening the door to the apocalypse. This existential angst was triggered by the prospect of protons colliding at extremely high energies. Einstein's general theory of relativity suggests that concentrating this kind of energy in a volume smaller than an atom might distort space and time enough to tear a hole in the fabric of the universe. This "mini black hole" could rapidly expand to engulf the entire cosmos. CERN took the possibility seriously enough to carry out the ultimate workplace health and safety assessment. In 2008, it declared the disaster scenario virtually impossible. That assessment still stands, even though the LHC is now powering up to almost double its original energy. We aren't completely off the hook, however. That's because the Higgs boson, discovered in the LHC in 2012, has given us reason to believe we might destroy the universe in a completely different way. This danger was first pointed out in 2008 by physicists Lawrence Krauss and James Dent, both then at Case Western Reserve University in Cleveland, Ohio. The problem, they said, is that the universe is governed by the rules of quantum physics, where observations of a system can affect its state (see page 33). The notion might be familiar to you in the form of Schrödinger's cat. In this thought experiment, a cat is placed in a sealed box with a vial of deadly poison that will be cracked open if a quantum event occurs: the radioactive decay of an atom. According to standard interpretations of quantum theory, as long as the box remains sealed, the cat is both alive and dead. It is the act of opening the box and observing the state of the cat that determines whether the radioactive decay occurs. In other words, human observation changes the state of the system. Krauss and Dent suggested that something similar applies to the universe. It is theoretically possible to write down a quantum state for the cosmos. This moves between different states, just like the radioactive atom in the Schrödinger's cat experiment, and can be similarly affected -- in theory -- by human observations. An observation of something that is a property of the whole cosmos, such as the dark energy thought to be accelerating the universe's expansion, might cause a sudden shift from being in a mixture of two states to being in one definite state. So looking at a supernova could be enough to alter the overall quantum state of the universe. The result might just "reset" the universe's state, moving it back to where it was a few moments before. But there is a remote possibility of catastrophe. This is because we are living in what physicists call a false vacuum -- essentially an unstable configuration of space and time. That means the universe's quantum state is slowly decaying towards a more stable one. However, an observation could tip it into that state abruptly. The universe would suddenly cease to exist, then reappear as a new, more stable cosmos -- without us in it. Not surprisingly, this was a controversial idea when first raised, not least because we didn't know whether we were living in a false vacuum. However, some of the properties of the Higgs boson tell us that we almost certainly are. "The discovery makes the issues we discussed more relevant," says Krauss, who is now based at Arizona State University.

#### The fourth is hydron colliders and the fifth is black swans

Bostrom, 01 (Nick Bostrom, The homie, Professor, Faculty of Philosophy, Oxford University, 2001, accessed on 4-29-2021, Nickbostrom, "Existential Risks: Analyzing Human Extinction Scenarios", https://nickbostrom.com/existential/risks.html)//Babcii

4.7 Something unforeseenWe need a catch-all category. It would be foolish to be confident that we have already imagined and anticipated all significant risks. Future technological or scientific developments may very well reveal novel ways of destroying the world. Some foreseen hazards (hence not members of the current category) which have been excluded from the list of bangs on grounds that they seem too unlikely to cause a global terminal disaster are: solar flares, supernovae, black hole explosions or mergers, gamma-ray bursts, galactic center outbursts, supervolcanos, loss of biodiversity, buildup of air pollution, gradual loss of human fertility, and various religious doomsday scenarios. The hypothesis that we will one day become “illuminated” and commit collective suicide or stop reproducing, as supporters of VHEMT (The Voluntary Human Extinction Movement) hope [43], appears unlikely. If it really were better not to exist (as Silenus told king Midas in the Greek myth, and as Arthur Schopenhauer argued [44] although for reasons specific to his philosophical system he didn’t advocate suicide), then we should not count this scenario as an existential disaster. The assumption that it is not worse to be alive should be regarded as an implicit assumption in the definition of Bangs. Erroneous collective suicide is an existential risk albeit one whose probability seems extremely slight. (For more on the ethics of human extinction, see chapter 4 of [9].) 4.8 Physics disastersThe Manhattan Project bomb-builders’ concern about an A-bomb-derived atmospheric conflagration has contemporary analogues. There have been speculations that future high-energy particle accelerator experiments may cause a breakdown of a metastable vacuum state that our part of the cosmos might be in, converting it into a “true” vacuum of lower energy density [45]. This would result in an expanding bubble of total destruction that would sweep through the galaxy and beyond at the speed of light, tearing all matter apart as it proceeds. Another conceivability is that accelerator experiments might produce negatively charged stable “strangelets” (a hypothetical form of nuclear matter) or create a mini black hole that would sink to the center of the Earth and start accreting the rest of the planet [46]. These outcomes seem to be impossible given our best current physical theories. But the reason we do the experiments is precisely that we don’t really know what will happen. A more reassuring argument is that the energy densities attained in present day accelerators are far lower than those that occur naturally in collisions between cosmic rays [46,47]. It’s possible, however, that factors other than energy density are relevant for these hypothetical processes, and that those factors will be brought together in novel ways in future experiments. The main reason for concern in the “physics disasters” category is the meta-level observation that discoveries of all sorts of weird physical phenomena are made all the time, so even if right now all the particular physics disasters we have conceived of were absurdly improbable or impossible, there could be other more realistic failure-modes waiting to be uncovered. The ones listed here are merely illustrations of the general case.

#### A phase transition threatens *all* life which necessitates a form of util that extends to the cosmos --- Anything else is arbitrary and violent

\*This is specifically applying util to our impact

Joe Packer 7, then MA in Communication from Wake Forest University, now PhD in Communication from the University of Pittsburgh and Professor of Communication at Central Michigan University, Alien Life in Search of Acknowledgment, p. 62-63

Once we hold alien interests as equal to our own we can begin to revaluate areas previously believed to hold no relevance to life beyond this planet. A diverse group of scholars including Richard Posner, Senior Lecturer in Law at the University of Chicago, Nick Bostrom, philosophy professor at Oxford University, John Leslie philosophy professor at Guelph University and Martin Rees, Britain’s Astronomer Royal, have written on the emerging technologies that threaten life beyond the planet Earth. Particle accelerators labs are colliding matter together, reaching energies that have not been seen since the Big Bang. These experiments threaten a phase transition that would create a bubble of altered space that would expand at the speed of light killing all life in its path. Nanotechnology and other machines may soon reach the ability to self replicate. A mistake in design or programming could unleash an endless quantity of machines converting all matter in the universe into copies of themselves. Despite detailing the potential of these technologies to destroy the entire universe, Posner, Bostrom, Leslie, and Ree’s only mention of alien life in their works is in reference to the threat aliens post to humanity. The rhetorical construction of otherness only in terms of the threats it poses, but never in terms of the threat one poses to it, has been at the center of humanity’s history of genocide, colonization, and environmental destruction. Although humanity certainly has its own interests in reducing the threat of these technologies evaluating them without taking into account the danger they pose to alien life is neither appropriate nor just. It is not appropriate because framing the issue only in terms of human interests will result in priorities designed to minimize the risks and maximize the benefits to humanity, not all life. Even if humanity dealt with the threats effectively without referencing their obligation to aliens, Posner, Bostrom, Leslie, and Ree’s rhetoric would not be “just,” because it arbitrarily declares other life forms unworthy of consideration. A framework of acknowledgement would allow humanity to address the risks of these new technologies, while being cognizant of humanity’s obligations to other life within the universe. Applying the lens of acknowledgment to the issue of existential threats moves the problem from one of self destruction to universal genocide. This may be the most dramatic example of how refusing to extend acknowledgment to potential alien life can mask humanity’s obligations to life beyond this planet.

#### Even a small chance of universe extinction outweighs certain human extinction --- Earth is cosmically insignificant.

Dr. Nick Hughes 18, Postdoctoral Research Fellow at University College Dublin, PhD in Philosophy from University of St Andrews & University of Olso, and Dr. Guy Kahane, Professor of Philosophy at the University of Oxford, D. Phil. in Philosophy from Oxford University, “Our Cosmic Insignificance”, 7-6, <http://www.unariunwisdom.com/our-cosmic-insignificance/>

Humanity occupies a very small place in an unfathomably vast Universe. Travelling at the speed of light – 671 million miles per hour – it would take us 100,000 years to cross the Milky Way. But we still wouldn’t have gone very far. Our modest Milky Way galaxy contains 100–400 billion stars. This isn’t very much: according to the latest calculations, the observable universe contains around 300 sextillion stars. By recent estimates, our Milky Way galaxy is just one of 2 trillion galaxies in the observable Universe, and the region of space that they occupy spans at least 90 billion light-years. If you imagine Earth shrunk down to the size of a single grain of sand, and you imagine the size of that grain of sand relative to the entirety of the Sahara Desert, you are still nowhere near to comprehending how infinitesimally small a position we occupy in space. The American astronomer Carl Sagan put the point vividly in 1994 when discussing the famous ‘Pale Blue Dot’ photograph taken by Voyager 1. Our planet, he said, is nothing more than ‘a mote of dust suspended in a sunbeam’. Stephen Hawking delivers the news more bluntly. We are, he says, “just a chemical scum on a moderate-sized planet, orbiting round a very average star in the outer suburb of one among a hundred billion galaxies.” And that’s just the spatial dimension. The observable Universe has existed for around 13.8 billion years. If we shrink that span of time down to a single year, with the Big Bang occurring at midnight on 1 January, the first Homo sapiens made an appearance at 22:24 on 31 December. It’s now 23:59:59, as it has been for the past 438 years, and at the rate we’re going it’s entirely possible that we’ll be gone before midnight strikes again. The Universe, on the other hand, might well continue existing forever, for all we know. Sagan could have added, then, that our time on this mote of dust will amount to nothing more than a blip. In the grand scheme of things we are very, very small. For Sagan, the Pale Blue Dot underscores our responsibility to treat one another with kindness and compassion. But reflection on the vastness of the Universe and our physical and temporal smallness within it often takes on an altogether darker hue. If the Universe is so large, and we are so small and so fleeting, doesn’t it follow that we are utterly insignificant and inconsequential? This thought can be a spur to nihilism. If we are so insignificant, if our existence is so trivial, how could anything we do or are – our successes and failures, our anxiety and sadness and joy, all our busy ambition and toil and endeavour, all that makes up the material of our lives – how could any of that possibly matter? To think of one’s place in the cosmos, as the American philosopher Susan Wolf puts it in ‘The Meanings of Lives’ (2007), is ‘to recognise the possibility of a perspective … from which one’s life is merely gratuitous’. The sense that we are somehow insignificant seems to be widely felt. The American author John Updike expressed it in 1985 when he wrote of modern science that: We shrink from what it has to tell us of our perilous and insignificant place in the cosmos … our century’s revelations of unthinkable largeness and unimaginable smallness, of abysmal stretches of geological time when we were nothing, of supernumerary galaxies … of a kind of mad mathematical violence at the heart of the matter have scorched us deeper than we know. In a similar vein, the French philosopher Blaise Pascal wrote in *Pensées* (1669): When I consider the short duration of my life, swallowed up in an eternity before and after, the little space I fill engulfed in the infinite immensity of spaces whereof I know nothing, and which know nothing of me, I am terrified. The eternal silence of these infinite spaces frightens me. Commenting on this passage in *Between Man and Man* (1947), the Austrian-Israeli philosopher Martin Buber said that Pascal had experienced the ‘uncanniness of the heavens’, and thereby came to know ‘man’s limitation, his inadequacy, the casualness of his existence’. In the film *Monty Python’s* *The Meaning of Life* (1983), John Cleese and Eric Idle conspire to persuade a character, played by Terry Gilliam, to give up her liver for donation. Understandably reluctant, she is eventually won over by a song that sharply details just how comically inconsequential she is in the cosmic frame. Even the relatively upbeat Sagan wasn’t, in fact, immune to the pessimistic point of view. As well as viewing it as a lesson in the need for collective goodwill, he also argued that the Pale Blue Dot challenges ‘our posturings, our imagined self-importance, and the delusion that we have some privileged position in the Universe’. When we reflect on the vastness of the universe, our humdrum cosmic location, and the inevitable future demise of humanity, our lives can seem utterly insignificant. As we complacently go about our little Earthly affairs, we barely notice the black backdrop of the night sky. Even when we do, we usually see the starry skies as no more than a pleasant twinkling decoration. This sense of cosmic insignificance is not uncommon; one of Joseph Conrad’s characters describes one of those dewy, clear, starry nights, oppressing our spirit, crushing our pride, by the brilliant evidence of the awful loneliness, of the hopeless obscure insignificance of our globe lost in the splendid revelation of a glittering, soulless universe. I hate such skies. The young Bertrand Russell, a close friend of Conrad, bitterly referred to the Earth as “the petty planet on which our bodies impotently craw.” Russell wrote that: Brief and powerless is Man’s life; on him and all his race the slow, sure doom falls pitiless and dark. Blind to good and evil, reckless of destruction, omnipotent matter rolls on its relentless way…This is why Russell thought that, in the absence of God, we must build our lives on “a foundation of unyielding despair.” When we consider ourselves as a mere dot in a vast universe, when we consider ourselves in light of everything there is, nothing human seems to matter. Even the worst human tragedy may seem to deserve no cosmic concern. After all, we are fighting for attention with an incredibly vast totality. How could this tiny speck of dust deserve even a fraction of attention, from that universal point of view? This is the image that is evoked when, for example, Simon Blackburn writes that “to a witness with the whole of space and time in its view, nothing on the human scale will have meaning”. Such quotations could be easily multiplied—we find similar remarks, for example, in John Donne, Voltaire, Schopenhauer, Byron, Tolstoy, Chesterton, Camus, and, in recent philosophy, in Thomas Nagel, Harry Frankfurt, and Ronald Dworkin. The bigger the picture we survey, the smaller the part of any point within it, and the less attention it can get… When we try to imagine a viewpoint encompassing the entire universe, humanity and its concerns seem to get completely swallowed up in the void. Over the centuries, many have thought it absurd to think that we are the only ones. For example, Anaxagoras, Epicurus, Lucretius, and, later, Giordano Bruno, Huygens and Kepler were all confident that the universe is teeming with life. Kant was willing to bet everything he had on the existence of intelligent life on other planets. And we now know that there is a vast multitude of Earth-like planets even in our own little galaxy.

#### Using only current life and extremely pessimistic calculations --- We only need to win a 1 in *420* billionth (.00000000000238) risk of a link to outweigh

Lichfield, 16 (Gideon Lichfield, Editor-in-Chief of MIT Technology Review, Senior Editor at Quartz, Fellow at the Data and Society Research Institute, MSc in the Philosophy of Science from the London School of Economics and Political Science, BSc in Physics and Philosophy from the University of Bristol, Former Adjunct Professor in the Global Journalism Program at New York University, “There Have Probably Been Trillions Of Alien Civilizations, And Yet We May Still Never See One”, Quartz, 6-11, <https://qz.com/704687/there-have-probably-been-trillions-of-alien-civilizations-and-yet-we-may-still-never-see-one/>)//Babcii

Sorry, everybody. We’re just not that special. In more than five decades of scanning the heavens, the search for extraterrestrial intelligence (SETI) has found no sign of alien life. Yet now two American astronomers, in the scientific equivalent of a back-of-the-envelope calculation, are estimating that over the course of its history the universe has seen at least half a trillion technologically advanced species. The [paper in Astrobiology](http://online.liebertpub.com/doi/pdfplus/10.1089/ast.2015.1418) by Adam Frank and Woodruff Sullivan notes that, in just the last few years, we’ve gained a much clearer sense of how hospitable the universe is to life. NASA’s Kepler space telescope has identified [thousands of planets](http://techcrunch.com/2016/05/12/astronomers-announce-largest-batch-of-new-planets-ever-discovered/) in our neighborhood of the galaxy, along with their sizes and distances from their stars. From there it’s fairly easy to guess how many may hold liquid water, which is probably essential for complex life. In our Milky Way galaxy alone there are, by this estimate, some 60 billion such “habitable” planets, write Frank and Sullivan. The big remaining unknown is how many of these planets give rise to the kinds of lifeforms that build advanced technology (if nuclear weapons and Oculus Rifts can be called “advanced”). Since Earth is the only one we know of, the guesses vary wildly, but one such civilization per 10 billion habitable planets is generally considered “highly pessimistic,” wrote Frank in the New York Times [yesterday](http://www.nytimes.com/2016/06/12/opinion/sunday/yes-there-have-been-aliens.html). In astronomy-speak, this means the figure could be 10, 100 or even 1,000 times too low. Using that “pessimistic” proportion, and other numbers from Frank and Sullivan’s paper, I calculated how many alien civilizations should have emerged within various subregions of the universe during its history: Remember, 420 billion intelligent civilizations is the “pessimistic” estimate. But sadly—or happily, depending on your view of aliens—it doesn’t make us any less alone.

#### Consensus of scientists agree --- life is standard on billions of planets

Lowth 17 – Marcus Lowth, Science and Astronomy Writer for Listverse, Owner of Me Time 4 The Mind, “10 Reasons Alien Life Really Is Probably Out There Somewhere”, Listverse, 12-14, http://listverse.com/2017/12/14/10-reasons-alien-life-really-is-probably-out-there-somewhere/

Although most people are skeptical, alien life, whether advanced or merely microbial, most likely exists somewhere in the universe. Most scientists agree that this is almost certainly the case. That doesn’t mean that gray aliens with large heads and big eyes are out there abducting people, but it is almost a statistical certainty that some kind of cosmic microbe or “space insect” is going about its business somewhere in the universe. With that in mind, here are 10 reasons why alien life probably does exist. 10 Simple Law Of Averages Although actual numbers change all the time due to new discoveries or even the downgrading of a planet to a dwarf planet or moon, it is largely agreed that there are billions of planets, solar systems, and galaxies in the vast reaches of the cosmos.[1]When you consider that space is “never-ending,” so then must the possibilities of other planets be never-ending. In turn, this increases the chance of life existing somewhere in the depths of space. Even if we believe that only 1 percent of these planets harbor life, it is still a huge number of cosmic bodies with life. As is the case here on Earth, each planet is likely to have life in many forms. That is a lot of aliens out there. Of course, until firm proof is offered, even the probability of alien life will be downplayed and dismissed by some. 9 Water Is Everywhere (Relatively Speaking) If water is the key to a cosmic body being able to host life as we understand it, then that’s good news for those who feel they will be vindicated in their beliefs one day. Relatively speaking, water is everywhere in the universe, although often in the form of ice. Not every time, however. There are many moons—within our own solar system, to boot—that have almost definite signs of liquid water.[2]Aside from differing views on whether liquid water is present on Mars, several moons of the gas giants Jupiter and Saturn show signs of possible liquid water. Perhaps most notably, one of Saturn’s moons, Enceladus, appears to shoot huge jet streams of water vapor and ice particles into outer space from cracks in the icy surface. This also suggests significant geological activity that could provide the right conditions for life. 8 Life Could Be Based On Other Elements For the most part, mainstream science concentrates on locating life that requires the same conditions and building blocks as Earth’s life-forms. However, it is possible that life could exist on another planet that requires a completely different set of conditions and would truly be “alien” to us. Again, the possibilities are endless, but perhaps there is a being that resides in liquid or gas form? Or, if a given planet has an atmosphere comprised of hydrogen or nitrogen, for example, might its life-forms primarily be based upon these elements? Or perhaps one of these elements is abundant in liquid form, and so it takes the place in alien life-forms of the water in our bodies.This theory is supported in part by the increasing number of living organisms (known as extremophiles) that thrive in otherwise hostile conditions on Earth. It is not that much of a stretch of the imagination to believe that a similar organism might exist in the freezing conditions of Mars or even the hellish inferno that is Venus.In short, we may not have found alien life yet because we may not know what we are looking for.[3] Just to take it a thought further: Alien life could even exist in a form that is undetectable to us in terms of what our eyes and ears can see and hear. It really could be a case of we don’t know that we don’t know, but we don’t know! Yet! 7 The Rapid Rise Of Life Here On Earth Again in relative terms, life on Earth—particularly human life—has sprung out of nowhere quite recently. According to some researchers, this shows that such an event is not simply bizarre luck under specific one-time-only conditions. Instead, it will likely be replicated throughout space. In short, our existence is nothing special, just a standard reaction to a planet’s development.[4]Again, many have suggested that perhaps life did exist on Mars long ago when it was believed to have had an atmosphere and liquid water like Earth does. Similar assertions have been made about Venus given that its terrain and size are similar to that of Earth. Perhaps life did exist on Venus until some event created a “greenhouse effect,” raising the temperatures and turning it into a lifeless cosmic body.

#### Err neg --- Even if we are wrong about aliens only our impact can remove the possibility of *future* life

\*Specific to vacuum decay

Mack, 15 (Katie Mack, Katie Mack is an astrophysicist at North Carolina State University, 9-13-2015, accessed on 4-27-2021, Cosmos Magazine, "Vacuum decay: the ultimate catastrophe - Cosmos Magazine", https://cosmosmagazine.com/physics/vacuum-decay-ultimate-catastrophe/)//Babcii

So we don’t need to worry. But what would happen if the vacuum did decay?

The walls of the true vacuum bubble would expand in all directions at the speed of light. You wouldn’t see it coming. The walls can contain a huge amount of energy, so you might be incinerated as the bubble wall ploughed through you. Different vacuum states have different constants of nature, so the basic structure of matter might also be disastrously altered. But it could be even worse: in 1980, theoretical physicists Sidney Coleman and Frank De Luccia calculated for the first time that any bubble of true vacuum would immediately suffer total gravitational collapse.

They say: “This is disheartening. The possibility that we are living in a false vacuum has never been a cheering one to contemplate. Vacuum decay is the ultimate ecological catastrophe; in a new vacuum there are new constants of nature; after vacuum decay, not only is life as we know it impossible, so is chemistry as we know it.

“However, one could always draw stoic comfort from the possibility that perhaps in the course of time the new vacuum would sustain, if not life as we know it, at least some creatures capable of knowing joy. This possibility has now been eliminated.”

#### Correct against your bias --- Scope neglect and collapse of compassion means you under appreciate our impact

McKelvie, 17 (Leah McKelvie, Co-Founder of Animal Ethics, 5-20-2017, accessed on 4-29-2021, Animal-ethics, "Scope insensitivity: failing to appreciate the numbers of those who need our help", https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/)//Babcii

Consider one billion animals. Now consider one trillion animals. The second number is vastly higher. However, it is difficult for many people to have a clear idea of what the magnitude of that difference is. As a result of this, we often fail to assess properly what we should do when large numbers of individuals are affected.

This is due to a cognitive bias called scope insensitivity. It is also known as scope neglect. It means we don’t realize the real scope of a certain quantity. So when we compare two different quantities we fail to notice the difference between them. This usually happens when those quantities are very large.

Scope insensitivity causes people not to adjust their valuation of an issue in proportion to the size or scale of it.[1](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote1sym) Scope insensitivity especially impairs our judgments about helping animals because of the massive amount of animal suffering and death.

Scope insensitivity probably occurs due to our inability to visualize, or otherwise imagine, such large numbers. When we are not able to visualize a situation where a large number of individuals need our help, we must instead understand it at a more abstract quantitative level. This rarely triggers a strong emotional reaction in us, such as we get when we help a particular number of individuals we can visualize. Importantly from an ethical standpoint, it has been argued that too little emotional involvement can lead to a failure to react.[2](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote2sym) Because of that, scope insensitivity may contribute to non-optimal decision outcomes in situations where the goal is to improve the situation of as many individuals as possible.[3](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote3sym) In fact, sometimes those decisions are very poor ones.

An example: how much would you be willing to pay to save a certain number of animals?

In the original study that assessed this phenomenon, different groups of people were asked how much they would pay to save either a group of 2,000 birds, another of 20,000 birds, or a group of 200,000 birds from drowning in ponds polluted with oil. Assuming people’s intention was truly to help as many birds as possible, they should value each of their lives equally. If they were looking clearly at the issue, we would expect them to be willing to pay 10 times as much for the second group as for the first group, and 100 times as much for the third group as for the first group. In fact, the results showed that willingness to pay did not increase in proportion with the number of birds saved.[4](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote4sym) Participants were willing to pay $80 to save 2,000 birds. They were willing to pay $78 to save 20,000. That is, 2$ less to save 18,000 more individuals. Finally, they were willing to pay $88 to save 200,000. Thus, only 8$ extra to help 180,000 more birds. That suggests that participants valued each individual bird less the more of them there were to save (4, 0.39, and 0.044 cents, respectively).

This is a clear case of scope insensitivity. The fact that participants were only willing to pay $80 to save a group of 2,000 birds is very problematic in its own right. Yet, the scope insensitivity they showed is also worrisome, given how it impairs our moral judgment when confronted when very large numbers of individuals in need of our help.

A psychological explanation of the scope insensitivity bias

One explanation of how scope insensitivity occurs has to do with how we often represent things in order to understand them, which is called representativeness heuristic (heuristics, often referred to as “mental shortcuts,” are ways to easily solve problems, especially when we have to make a decision). The representativeness heuristic describes people’s tendency to imagine a simple, normal example of the type of problem being presented to them, rather than picturing all the specific details of the case in question, which may be very complex. Like all heuristics, this is can be a useful mental shortcut, since it reduces problems to a more manageable size, thereby simplifying our information processing and decision-making efforts.

However, as the example above shows, this mechanism can be inappropriate to use in many situations. In the example, people tended to imagine or visualize roughly the same thing, so their natural empathy was stimulated to roughly the same degree by all of them, despite the significant differences in the three numbers.[5](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote5sym)

If a person’s aim is to feel good, or to avoid feeling bad, through some altruistic behavior (like a charitable donation), they do not have an incentive to check whether they are actually doing some good or just seeming to do so – because it feels the same in each case and that is their bottom line.[6](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote6sym) In addition, being confronted with too much suffering can lead to what is often called the collapse of compassion, a defense mechanism that reduces or eliminates our sensitivity to the harms others suffer when we are faced with massive amounts of suffering.[7](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote7sym) As a result, people will tend not to do the cognitive work of adjusting for scope neglect.

That being said, part of the problem may consist in people simply failing to notice their bias, meaning that they would adjust their decisions if only they were informed about its existence.[8](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote8sym)

In addition, due to the key role of emotions in moral intuitions and in decision-making processes,[9](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote9sym) it has been shown that raising emotional concern for individual victims of large-scale suffering increases overall concern. It has also been shown that personal stories and visual images motivate helping responses more than using abstract numerical figures and statistics. These vivid descriptions of single individuals in need can be useful to keep emotions aroused when large numbers of individuals are concerned.[10](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote10sym) This is a way of trying to adjust advocacy to the existence of cognitive biases. It is problematic, however, as we are not always going to be able to do this. For instance, we may not be able to provide such stories when we consider possible new forms of suffering in the future.

Scope insensitivity and our failure to help animals in the wild in need of aid

Scope insensitivity is especially problematic when it biases us away from helping animals in the wild. There is an astronomical amount of suffering constantly going on in the natural world. For example, the leading estimate as to the number of insects in the wild is 1018.[11](https://www.animal-ethics.org/cognitive-biases-and-animals/scope-insensitivity-failing-to-appreciate-the-numbers-of-those-who-need-our-help/" \l "sdfootnote11sym) A majority of these animals die a painful death in their first days of life. This amount of suffering simply dwarfs any that we are used to dealing with or thinking about.

In order to react properly to these magnitudes, we should be prepared to adjust our initial emotional reaction based on our more abstract understanding of the quantity. For example, we can try to imagine the largest number of insects that we can and then try to remember how much bigger of an issue it is than we can possibly imagine.

Giving everyone equal consideration

The equivalent suffering of each individual should be given the same consideration. Unfortunately, however, the valuations of individual lives and suffering are often guided by moral intuitions which are highly influenced by non-rational mechanisms and emotions that can lead to partial judgments. As we have seen here, one of these mechanisms is scope insensitivity.

Hence, we cannot rely solely on our more immediate decision-making processes when making moral judgments involving large numbers of individuals. We must bear this in mind and try to adjust for the errors our decision-making process will run into because of this bias.

#### The risk is massive --- Humans are a kid with a gun when it comes to new tech

Piper, 18 (Kelsey Piper, a Staff Writer for Vox. Bachelors in Symbolic Systems from Stanford, 11-19-2018, accessed on 5-2-2021, Vox, "How technological progress is making it likelier than ever that humans will destroy ourselves", https://www.vox.com/future-perfect/2018/11/19/18097663/nick-bostrom-vulnerable-world-global-catastrophic-risks)//Babcii

What we haven’t extracted, so far, is a black ball—a technology that invariably or by default destroys the civilization that invents it. The reason is not that we have been particularly careful or wise in our technology policy. We have just been lucky. That terrifying final claim is the focus of the rest of the paper. A hard look at the history of nuclear weapon development One might think it unfair to say “we have just been lucky” that no technology we’ve invented has had destructive consequences we didn’t anticipate. After all, we’ve also been careful, and tried to calculate the potential risks of things like nuclear tests before we conducted them. Bostrom, looking at the history of nuclear weapons development, concludes we weren’t careful enough. In 1942, it occurred to Edward Teller, one of the Manhattan scientists, that a nuclear explosion would create a temperature unprecedented in Earth’s history, producing conditions similar to those in the center of the sun, and that this could conceivably trigger a self-sustaining thermonuclear reaction in the surrounding air or water. The importance of Teller’s concern was immediately recognized by Robert Oppenheimer, the head of the Los Alamos lab. Oppenheimer notified his superior and ordered further calculations to investigate the possibility. These calculations indicated that atmospheric ignition would not occur. This prediction was confirmed in 1945 by the Trinity test, which involved the detonation of the world’s first nuclear explosive. That might sound like a reassuring story — we considered the possibility, did a calculation, concluded we didn’t need to worry, and went ahead. The report that Robert Oppenheimer commissioned, though, sounds fairly shaky, for something that was used as reason to proceed with a dangerous new experiment. It ends: “One may conclude that the arguments of this paper make it unreasonable to expect that the N + N reaction could propagate. An unlimited propagation is even less likely. However, the complexity of the argument and the absence of satisfactory experimental foundation makes further work on the subject highly desirable.” That was our state of understanding of the risk of atmospheric ignition when we proceeded with the first nuclear test. A few years later, we badly miscalculated in a different risk assessment about nuclear weapons. Bostrom writes: In 1954, the U.S. carried out another nuclear test, the Castle Bravo test, which was planned as a secret experiment with an early lithium-based thermonuclear bomb design. Lithium, like uranium, has two important isotopes: lithium-6 and lithium-7. Ahead of the test, the nuclear scientists calculated the yield to be 6 megatons (with an uncertainty range of 4-8 megatons). They assumed that only the lithium-6 would contribute to the reaction, but they were wrong. The lithium-7 contributed more energy than the lithium-6, and the bomb detonated with a yield of 15 megaton—more than double of what they had calculated (and equivalent to about 1,000 Hiroshimas). The unexpectedly powerful blast destroyed much of the test equipment. Radioactive fallout poisoned the inhabitants of downwind islands and the crew of a Japanese fishing boat, causing an international incident. Bostrom concludes that “we may regard it as lucky that it was the Castle Bravo calculation that was incorrect, and not the calculation of whether the Trinity test would ignite the atmosphere.” Nuclear reactions happen not to ignite the atmosphere. But Bostrom believes that we weren’t sufficiently careful, in advance of the first tests, to be totally certain of this. There were big holes in our understanding of how nuclear weapons worked when we rushed to first test them. It could be that the next time we deploy a new, powerful technology, with big holes in our understanding of how it works, we won’t be so lucky.

# 2NC

## 2NC --- CP

### 2NC --- “Create humans”

#### 2. Time scales, biogenic capacity, and strong planets solves creating more humans

**Kaçar, 20** ([Betül Kaçar](https://aeon.co/users/betul-kacar) , an assistant professor at the University of Arizona and a NASA Early Career Faculty Award recipient. She is the director of the NASA Astrobiology Consortium [MUSE](http://muse.arizona.edu/), , 11-20-2020, accessed on 5-14-2021, Aeon, "If we’re alone in the Universe, should we do anything about it? – Betül Kaçar | Aeon Essays", https://aeon.co/essays/if-were-alone-in-the-universe-should-we-do-anything-about-it)//babcii

Protospermia, as a technological capability, could defy ethical resolution according to the criteria explored in previous debates. First, the timescales involved aren’t inherently human, or at least human-cultural. If we choose to ‘send the goo’ to various destinations in our solar system and beyond, it would likely take thousands or millions of years for a self-replicating chemical system to emerge, far beyond even the most long-lived of our mortal concerns. Second, by sending a biogenic capacity and not a strictly predetermined molecular architecture, we would circumvent some of the uglier, more domineering aspects involved with pushing an alien (ie, Terran) physiology on other unsuspecting worlds through in situ missions or terraforming. Whatever arose would be a product of that world. If that world already had life, it is very unlikely that the goo we send could practically overwrite what is already there.

### 2NC --- Feasible

#### 1. Tech for the space travel and funding for the project are feasible and occurring now

**Kaçar, 20** ([Betül Kaçar](https://aeon.co/users/betul-kacar) , an assistant professor at the University of Arizona and a NASA Early Career Faculty Award recipient. She is the director of the NASA Astrobiology Consortium [MUSE](http://muse.arizona.edu/), , 11-20-2020, accessed on 5-14-2021, Aeon, "If we’re alone in the Universe, should we do anything about it? – Betül Kaçar | Aeon Essays", https://aeon.co/essays/if-were-alone-in-the-universe-should-we-do-anything-about-it)//babcii

Scientists and engineers are now exercising an ability to permanently reconfigure (and disfigure) the Earth, while also significantly reducing the technological barriers of extraterrestrial transportation. Destinations in our galaxy that once seemed ‘impossible to reach’ are now just ‘prohibitively expensive’. These destinations are, as I write, moving quickly into an even lesser category of ‘logistically difficult’. Various agencies and groups including NASA, the European Space Agency (ESA), the Committee on Space Research (COSPAR), the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), and the UN Office for Outer Space Affairs (UN OOSA) all maintain standing offices and observe international agreements regarding forward and backward contamination of places within our solar system. A private nongovernmental organisation is seriously funding an effort to send interstellar beacons to directly image a nearby planetary system. This is real. What once was an exercise in international ethics, scientific reservation and esoteric theology might soon exhibit competitive legal, economic and political dimensions that reshape the collective future of our species.

#### 2. So is the chemistry --- Key barriers are being solved

**Kaçar, 20** ([Betül Kaçar](https://aeon.co/users/betul-kacar) , an assistant professor at the University of Arizona and a NASA Early Career Faculty Award recipient. She is the director of the NASA Astrobiology Consortium [MUSE](http://muse.arizona.edu/), , 11-20-2020, accessed on 5-14-2021, Aeon, "If we’re alone in the Universe, should we do anything about it? – Betül Kaçar | Aeon Essays", https://aeon.co/essays/if-were-alone-in-the-universe-should-we-do-anything-about-it)//babcii

Whether we are creating new forms of life in a lab on Earth or elsewhere in the Universe – we are currently creating new chemical possibilities, and therefore new potential forms of appreciation and value that can affect the way we live. The technological possibilities of applied prebiotic chemistry are only now beginning to be resolved. We can imagine using chemical reactions to perform computational processes much more efficiently than silicon chips. We can imagine self-organising organic chemical systems engineering solutions to pressing environmental problems. We can imagine hybrid systems composed of Earth life and prebiotic chemical systems greatly expanding and stabilising human exploration of the solar system.

## 2NC --- Case

### 2NC --- !/OV

#### The impact is linear --- The more we observe the more likely a decay

Arkell 14 (Esther Inglis-, Contributor to the Genetic Literacy Project, Contributing Editor and Senior Reporter at io9, Freelance Writer for Ars Technica, BS in Physics from Dartmouth College, "We Might Be Destroying The Universe Just By Looking At It", io9 – Gizmodo, 2/3/14, <https://io9.gizmodo.com/we-might-be-destroying-the-universe-just-by-looking-at-1514652112>)

Dark energy drives the expansion of the universe. Although bubbles decay, they decay along different lines according to the energy state they're in when they start collapsing. If they're in a high energy state, the rate of decay is also high. If they're in a low energy state, the rate of decay is slow. Put the fast rate of decay in a race against the expansion of the universe, and we are all winked out of existence. Put the slow rate of decay in that same race, and we all have the chance to live productive lives. The problem is, when we observe a system, we can keep it in a certain state. Studies have shown that repeatedly observing the state of an atom set to decay can keep that atom in its higher-energy state. When we observe the universe, especially the "dark" side of the universe, we might be keeping it in its higher-energy state. If the process of collapse happens when it is in that state, the universe will cease to exist. If we stop looking, and the universe quietly shifts to a state at which its decay is slower, then we're all saved. The more we look at the universe, the more likely it is to end.

#### Massive colliders are coming soon that greatly increase the risk

McKeown 15 – Rory McKeown, Journalist for the Daily Star, quoting Wang Yifang, Director of the Institute of High Emergency Physics at the China Academy of Sciences, Stephen Hawking and Sir Martin Rees, President of the Royal Society, Fellow of Trinity College and Emeritus Professor of Cosmology and Astrophysics at the University of Cambridge, “China To Build A Gigantic Hadron Collider That Could Destroy The UNIVERSE”, The Daily Star, 12-13, https://www.dailystar.co.uk/news/latest-news/481133/China-build-gigantic-hadron-collider-destroy-UNIVERSE

Physicists in the Far East want to start building a huge particle accelerator to uncover the unsolved mysteries surrounding the universe. The proposed gigantic machine will better Europe’s collider at CERN in Switzerland for both power and size. With a staggering circumference of between 30 to 62 miles, it is long enough to circle New York's Manhattan. But the move could have disastrous consequences for the universe as we know it – with its potential to create a black hole or spontaneously combust. Brit scientist Professor Stephen Hawking made a bleak claim last year that search for the Higgs boson particle – often referred to as the God particle – could end the world in 10 to 100 years time. China is expected to start building its Frankenstein’s Monster of physics in 2020. But conspiracy theorists were quick to point out the date coincides with a prophecy suggesting the arrival of the antichrist. The Circular Electron Positron Collider (CEPC) was announced by experts at the China Academy of Sciences and reportedly will generate millions of Higgs bosons particles – a huge amount more than the Large Hadron Collider. Wang Yifang, director of the Institute of High Emergency Physics at the academy, said the massive tunnel will hold two super colliders. They want the CEPC to be the first stage of the project, which aims to discover how the Higgs boson particle decays following collision. China hopes its mean machine will get the closest humanity has ever got to creating the conditions just after the Big Bang. Wang said the project will generate seven times the energy of Europe’s own collider. He said: “LHC is hitting its limits of energy level. “It seems not possible to escalate the energy dramatically ay the existing facility. “The technical route we chose is different from the LHC. “While the LHC smashes together protons, it generates Higgs particles together with many other particles.” He told China Daily the CEPC, which is set to be build near the start of the Great Wall, creates a “clean environment that only produces Higgs boson particles.” “This is a machine for the world and by the world: not a Chinese one", he added. The second stage of the accelerator – a Super Proton-Proton Collider (SPPC) would begin construction in 2040. Here scientists could be able to shed light on dark matter, the Big Bang and black holes. And the process would, according to Sir Martin Rees, Astronomer Royal of the UK, leave the planet “an inert hyperdense sphere about one hundred metres across.” But for all the advancement in science and technology, some fear human intervention into the unknown could wipe out the universe. Prof Hawking described the discovery of the Higgs boson particle in 2012 as a doomsday scenario. He warned: “The Higgs potential has the worrisome feature that it might become metastable at energies above 100 billion gigaelectronvolts. “This could mean that the universe could undergo catastrophic vacuum decay, with a bubble of the true vacuum expanding the speed of light. “This could happen at any time and we wouldn’t see it coming.”

#### 5. Black swans --- An avalanche of quantum developments are coming quickly

Bertone 18 [Dr. Gianfranco Bertone, Professor in the GRAPPA Institute and Institute of Physics at the University of Amsterdam, PhD in Astrophysics from the University of Oxford, and Dr. Tim M.P. Tait, Professor in the Department of Physics and Astronomy at the University of California, Irvine, PhD in Physics from Michigan State University, BSc in Physics from UC San Diego, Former Research Associate at the Fermi National Accelerator Laboratory and Argonne National Laboratory, "A New Era in the Quest for Dark Matter", Nature, 10/4/18, <https://arxiv.org/pdf/1810.01668.pdf>

In the quest for dark matter, naturalness has been the guiding principle since the dark matter problem was established in the early 1980s. Although the absence of evidence for new physics at the LHC does not rule out completely natural theories, we have argued that a new era in the search for dark matter has begun, the new guiding principle being “no stone left unturned”: from fuzzy dark matter (10−22 eV) to primordial black holes (10 M ), we should look for dark matter wherever we can. It is important to exploit to their fullest extent existing experimental facilities, most notably the LHC, whose data might still contain some surprises. And it is important to complete the search for WIMPs with direct detection experiments, until their sensitivity reaches the so-called neutrino floor94 . At the same time we believe it is essential to diversify the experimental effort, and to test the properties of dark matter with gravitational waves interferometers and upcoming astronomical surveys, as they can provide complementary information about the nature of dark matter. New opportunities in extracting such information from data arise from the booming field of machine learning, which is currently transforming many aspects of science and society. Machine learning methods have been already applied to a variety of dark matter-related problems, ranging from the identification of WIMPs from particle and astroparticle data95, 96 to the detection of gravitational lenses97, and from radiation patterns inside jets of quarks and gluons at the LHC98 to real-time gravitational waves detection99. In view of this shift of the field of dark matter searches towards a more data-driven approach, we believe it is urgent to fully embrace, and whenever possible to further develop, big data tools that allow to organize in a coherent and systematic way the avalanche of data that will become available in particle physics and astronomy in the next decade.

### 2NC --- Aliens/OV

#### 2. Bayesian Analysis --- Latest calculations and best evidence possible place life as easy and common

Ananthaswamy, 20 (Anil Ananthaswamy, Anil Ananthaswamy is an Indian author, and science journalist, who is currently a Knight Science Journalism Research fellow at the Massachusetts Institute of Technology. , 7-16-2020, accessed on 5-3-2021, Scientific American, "How Many Aliens Are in the Milky Way? Astronomers Turn to Statistics for Answers", https://www.scientificamerican.com/article/how-many-aliens-are-in-the-milky-way-astronomers-turn-to-statistics-for-answers/)//Babcii

That suggestion is exactly what Kipping attempted, estimating both the probability of abiogenesis and the emergence of intelligence. For a prior, he chose something called the Jeffreys prior, which was designed by another English statistician and astronomer, Harold Jeffreys. It is said to be maximally uninformative. Because the Jeffreys prior doesn’t bake in massive assumptions, it places more weigh on the evidence. Turner and Spiegel had also tried to find an uninformative prior. “If you want to know what the data is telling you and not what you thought about it previously, then you want an uninformative prior,” Turner says. In their 2012 analysis, the researchers employed three priors, one of which was the least informative, but they fell short of using Jeffreys prior, despite being aware of it. In Kipping’s calculation, that prior focused attention on what he calls the “[four corners](https://www.youtube.com/watch?v=iLbbpRYRW5Y)” of the parameter space: life is common, and intelligence is common; life is common, and intelligence is rare; life is rare, and intelligence is common; and life is rare, and intelligence is rare. All four corners were equally likely before the Bayesian analysis began. Turner agrees that using the Jeffreys prior is a significant advance. “It’s the best way that we have, really, to just ask what the data is trying to tell you,” he says. Combining the Jeffreys prior with the sparse evidence of the emergence and intelligence of life on Earth, Kipping obtained a posterior probability distribution, which allowed him to calculate new odds for the four corners. He found, for instance, that the “life is common, and intelligence is rare” scenario is nine times more likely than both life and intelligence being rare. And even if intelligence is not rare, the life-is-common scenario has a minimum odds ratio of 9 to 1. Those odds are not the kind that one would bet the house on, Kipping says. “You could easily lose the bet.” Still, that calculation is “a positive sign that life should be out there,” he says. “It is, at least, a suggestive hint that life is not a difficult process.”

#### 2. Life is resilient --- It will inevitably show up somewhere after us

Grinspoon, 03 Southwest Research Institute Principle Scientist Department of Space Studies and adjunct professor of Astrophysical and Planetary Sciences at the University of Colorado, 03 <David, Lonely Planets: The Natural Philosophy of Alien Life, pg 415>

My belief in aliens is inseparable from a certain unavoidable, foolish, naturalistic optimism about our own ultimate prospects. Everything that I’ve learned about the nature of our universe and our biosphere tells me that life will find a way to thrive.Gaia, as Lynn Margulishas said, “is a tough ~~bitch.~~” If her noosphere chops off its head, she’ll keep grooving along**.** In time, she may grow another noosphere**,** giving a different proto-intelligent species a chance at reaching the big time. I see our proud little spurt of technical invention as a little eddy in a whirling universe that is evolving, self-organizing, and moving inexorably toward more life and more intelligence. Our little whorl could wink out in an instant, or it could grow into a deeper more stable mind-storm. Is psychogenesis limited to Earth? I doubt it. Will there be a psychozoic age of the universe? Has it already begun? If we believe even in the possibility of the transformation to wisdom and immortality, then we must live in a universe increasingly permeated with intelligence, and suffused with love. I proved it mathematically in the last chapter, and equations don’t lie.

### 2NC --- AT --- Fermi’s

#### a. Time

New Scientist, 07 <Aliens need a lot more time to find us, 20 January, http://space.newscientist.com/article/mg19325875.100-aliens-need-a-lot-more-time-to-find-us.html>

"SO, WHERE is everybody?" Nobel laureate Enrico Fermi reportedly quipped to fellow physicists in 1950, when discussing why we haven't seen any signs of alien civilisations if, as many believe, our galaxy is teeming with life. Now, a maths model may have an answer to Fermi's paradox**.** Rasmus Bjørk of the Niels Bohr Institute in Copenhagen, Denmark, has calculated that eight probes - travelling at a tenth of the speed of light and each capable of launching up to eight sub-probes **-** would take about 100,000 years to explore a region of space containing 40,000 stars. When Bjørk scaled up the search to include 260,000 such systems in our galaxy's habitable zone, the probes took almost 10 billion years - three-quarters the age of the universe - to explore just 0.4 per cent of the stars ([www.arxiv.org/astro-ph/0701238v1](http://www.arxiv.org/astro-ph/0701238v1)). So, Bjørk's answer to the Fermi paradox**:** aliens haven't contacted us because they haven't had the time to find us yet.

#### b. Lack of power

Shostak 01, Senior Astronomer SETI, is an [American](http://en.wikipedia.org/wiki/United_States) [astronomer](http://en.wikipedia.org/wiki/Astronomer). He grew up in[Arlington, VA](http://en.wikipedia.org/wiki/Arlington,_VA)[[1]](http://en.wikipedia.org/wiki/Seth_Shostak#cite_note-Nifty-0) and earned his [physics](http://en.wikipedia.org/wiki/Physics) degree from [Princeton University](http://en.wikipedia.org/wiki/Princeton_University) and a[Ph.D.](http://en.wikipedia.org/wiki/Ph.D.) in [astronomy](http://en.wikipedia.org/wiki/Astronomy) from the [California Institute of Technology](http://en.wikipedia.org/wiki/California_Institute_of_Technology).[[2]](http://en.wikipedia.org/wiki/Seth_Shostak#cite_note-SETI-1) He is the Senior Astronomer at the [SETI Institute](http://en.wikipedia.org/wiki/SETI_Institute) in [Mountain View, California](http://en.wikipedia.org/wiki/Mountain_View,_Santa_Clara_County,_California), and the 2004 winner of the [Klumpke-Roberts Award](http://en.wikipedia.org/wiki/Klumpke-Roberts_Award) awarded by the[Astronomical Society of the Pacific](http://en.wikipedia.org/wiki/Astronomical_Society_of_the_Pacific) in recognition of his outstanding contributions to the public understanding and appreciation of astronomy.[[3]](http://en.wikipedia.org/wiki/Seth_Shostak#cite_note-GALE-2) < Seth. Nov. 08, SETI Institute Fermi's Paradox Part 2 What's Blocking Galactic Civilization? http://www.seti.org/site/pp.asp?c=ktJ2J9MMIsE&b=179285>

Of course, if energy costs can be brought way down, for example with fusion or matter-antimatter technology, or by capturing more of the radiation spewed into space by the home star, this explanation might not hold water. But even if the aliens can afford colonization, maybe they haven’t got the stamina to see it through. Subduing the Galaxy takes more than sending a ship full of restless nomads to the next star. The nomads have to settle that star, and then spawn pilgrims of their own. And those émigrés have to produce yet more settlers. And so on. If each and every colony eventually founds two daughter settlements (a pretty decent accomplishment), then 38 generations of colonists are required to bring the entire Galaxy under control. Even the Polynesians, who swept across the western Pacific domesticating one island after another, didn’t manage this. Maybe the aliens can’t do it either.

### 2NC --- AT --- No Sentience

#### 2. Math disproves --- It’s common and easy

Wall, 16 (Mike Wall, Michael has been writing for Space.com since 2010. His book about the search for alien life, "Out There," was published on Nov. 13, 2018. Before becoming a science writer, Michael worked as a herpetologist and wildlife biologist. He has a Ph.D. in evolutionary biology from the University of Sydney, Australia, a bachelor's degree from the University of Arizona, and a graduate certificate in science writing from the University of California, Santa Cruz., 5-5-2016, accessed on 5-13-2021, Space, "The Universe Has Probably Hosted Many Alien Civilizations: Study ", <https://www.space.com/32793-intelligent-alien-life-probability-high.html)//Babcii>

Many other planets throughout the universe probably hosted intelligent life long before Earth did, a new study suggests. The probability of a civilization developing on a potentially habitable [alien planet](https://www.space.com/16681-alien-planets-quiz.html) would have to be less than one in 10 billion trillion — or one part in 10 to the 22nd power — for humanity to be the first technologically advanced species the cosmos has ever known, according to the study. "To me, this implies that other intelligent, technology-producing species very likely have evolved before us," said lead author Adam Frank, a professor of physics and astronomy at the University of Rochester in New York. [[13 Ways to Hunt Intelligent Alien Life](https://www.space.com/20155-hunting-intelligent-aliens-extreme-seti.html)] In 1961, astronomer Frank Drake devised a formula to estimate the number of extraterrestrial civilizations that may exist today in the Milky Way. Adam Frank and co-author Woodruff Sullivan of the University of Washington were interested in the odds that intelligent aliens have ever existed anywhere in the universe. So they tweaked the famous [Drake equation](https://www.space.com/25219-drake-equation.html), coming up with an "archaeological version" that doesn't take into account how long alien civilizations may last. Frank and Sullivan also incorporated observations from NASA's Kepler space telescope and other instruments, which suggest that about 20 percent of all stars host planets in the life-friendly, "habitable zone," where liquid water could exist on a world's surface. The researchers then calculated the probability that Earth was the universe's first-ever abode for intelligent life, after taking into account the number of stars in the observable universe (about 20 billion trillion, according to a recent estimate). "From a fundamental perspective, the question is, 'Has it ever happened anywhere before?'" Frank said. "Our result is the first time anyone has been able to set any empirical answer for that question, and it is astonishingly likely that we are not the only time and place that an advanced civilization has evolved."

### 2NC --- AT --- Alien’s trigger

#### 2. Science is localized---believing aliens will develop the same tech is parochial

Basalla 05 – Dr. George Basalla, PhD, Professor of History of Science and Technology at the University of Delaware, “Universal Science”, <https://www.fossilhunters.xyz/intelligent-extraterrestrials/universal-science.html> [Quoting Nicholas Rescher, University Professor of Philosophy and Former Director of the Center for Philosophy of Science at the University of Pittsburgh]

When philosopher Nicholas Rescherwas asked to comment on Drake’s notion of alien science**,** he dismissed it as infinitely parochial**.** It was like saying that extraterrestrials share our legal or political system**.** Rescher was well qualified to examine Drake’s claims. He had recently studied the anthropomorphic character of human science and how it related to alien science. Rescher struck at the heart of the popular conception of alien science when he challenged the widely held view that there is only one natural world and a single science to explain it**.** He called this the one world, one science argument. The physical universe is singular, Rescher agreed, but its interpreters are many and diverse**.** What we know about physical reality stems fromour special biological and cognitive make-up and our unique cultural and social heritage and experiences. We have no reason to suppose that extraterrestrials share our peculiar biological attributes, social outlook, or cultural traditions. Human science, therefore**,** is incommensurable with extraterrestrial science. If extraterrestrials cultivate science, it will be their kind of science, not our kind. Alien science is a wholly different form of knowledge. It is not human science raised to a higher degree. Rescher offered a compelling illustration of how human biology and our situation on Earth shaped our science. Astronomy as practiced by humans has been molded by the fact that we live on the surface of the Earth (not underwater), that we have eyes, and that the development of agriculture is linked to the seasonal positions of celestial objects. Intelligent alien creatures living in an oceanic abyss might develop sophisticated hydrodynamics but fail to study the motion of heavenly bodies, investigate electromagnetic radiation, or build radio telescopes. Even if extraterrestrials are surface dwellers, their biological endowment will determine what they are able to sense, their ecological niche, what aspects of nature they exploit to satisfy their needs, their cultural heritage, which questions about nature they find interesting to ask**.** Rescher acknowledges the existence of intelligent extraterrestrials who possess the ability to develop science and technology. He does not dispute the scientists’ repeated claims (1) that there is a single scientifically knowable physical reality and (2) that aliens are not simply other humans inhabiting a different planet. After adopting these claims, he demolishes the idea of a universal science that serves as a common language in the universe. Rescher maintains that wherever science exists in the universe, it will be localized**.** It will be the science of the creatures who have fashioned it. They will act according to their special physical constitution, environment, history, and needs. Hence, science diverges in the universe. It does not converge on the theories, concepts, and topics that happen to interest terrestrial researchers at this point in the history of the human intellect.

### 2NC --- AT --- Type II Civ

#### 2. Timeframe is way slower

Michio , 21 (Michio Michio , theoretical physicist. He holds the Henry Semat Chair and Professorship in theoretical physics at the City College of New York (CUNY), where he has taught for over 25 years. He has also been a visiting professor at the Institute for Advanced Study at Princeton, as well as New York University (NYU)., 4-6-2021, accessed on 4-30-2021, Mkaku, "The Physics of Interstellar Travel : Official Website of Dr. Michio Kaku", https://mkaku.org/home/articles/the-physics-of-interstellar-travel/)

By contrast, we are a Type 0 civilization, which extracts its energy from dead plants (oil and coal). Growing at the average rate of about 3% per year, however, one may calculate that our own civilization may attain Type I status in about 100-200 years, Type II status in a few thousand years, and Type III status in about 100,000 to a million years. These time scales are insignificant when compared with the universe itself.

On this scale, one may now rank the different propulsion systems available to different types of civilizations:

Type 0

* Chemical rockets
* Ionic engines
* Fission power
* EM propulsion (rail guns)

#### 3. Humans will never be able to leave the universe --- No offense

Siegel, 16 (Ethan Siegel, , Ethan R. Siegel is an American theoretical astrophysicist and science writer, who studies Big Bang theory. In the past he has been a professor at Lewis & Clark College , 5-12-2016, accessed on 4-30-2021, Forbes, "The Limits Of How Far Humanity Can Go In The Universe", https://www.forbes.com/sites/startswithabang/2016/05/12/the-limits-of-how-far-humanity-can-go-in-the-universe/?sh=5a6b921a4ae5)//Babcii

If you peer out into the depths of space -- at the vast expanse of stars, galaxies, and even the leftover glow from the Big Bang itself -- you might think that if humanity can understand the laws of nature and create a good enough technology, there are no limits to what we can explore. If we were to develop nuclear fusion technology, antimatter storage capabilities, or even the ability to harness dark matter as we traveled, we could unlock the potential for interplanetary, interstellar or even intergalactic travel. By accelerating ourselves over months or even years to reach near-light speeds, we could even reach our target destination within a single human lifetime.

Yet even if we imagine a future where we can do exactly that, there are still parts of the Universe that will be forever inaccessible to us. If the Universe were static, constant and forever unchanging, then all it would take was time to reach even the most distant object we could fathom. But our Universe isn't any of those things; it's expanding, cooling, and gravitating from an initially hot, dense state known as the Big Bang.

#### Independent colony is impossible.

**Levchenko et al. 19**. Professors in the Plasma Sources and Applications Centre/Space Propulsion Centre, NIE, Nanyang Technological University. 2019. “Mars Colonization: Beyond Getting There.” Global Challenges, vol. 3, no. 1.

Settlement of Mars—is it a dream or a necessity? From scientific publications to public forms, there is certainly little consensus on whether colonization of Mars is necessary or even possible

, with a rich diversity of opinions that range from categorical It is a necessity!20 to equally categorical Should Humans Colonize Other Planets? No.21 A strong proponent of the idea, Orwig puts forward five reasons for Mars colonization, implicitly stating that establishing a permanent colony of humans on Mars is no longer an option but a real necessity.20 Specifically, these arguments are: Survival of humans as a species; Exploring the potential of life on Mars to sustain humans; Using space technology to positively contribute to our quality of life, from health to minimizing and reversing negative aspects of anthropogenic activity of humans on Earth; Developing as a species; Gaining political and economic leadership. The first argument captures the essence of what most space colonization proponents feel—our ever growing environmental footprint threatens the survival of human race on Earth. Indeed, a large body of evidence points to human activity as the main cause of extinction of many species, with shrinking biodiversity and depleting resources threatening the very survival of humans on this planet. Colonization of other planets could potentially increase the probability of our survival. While being at the core of such ambitious projects as Mars One, a self‐sustained colony of any size on Mars is hardly feasible in the foreseeable future. Indeed, sustaining even a small number of colonists would require a continuous supply of food, oxygen, water and basic materials. At this stage, it is not clear whether it would be possible to establish a system that would generate these resources locally, or whether it would at least in part rely on the delivery of these resources (or essential components necessary for their local production) from Earth. Beyond the supply of these very basic resources, it would be quite challenging if not impossible for the colonists to independently produce hi‐tech but vitally important assets such as medicines, electronics and robotics systems, or advanced materials that provide us with a decent quality of life. In this case, would their existence become little more than the jogtrot of life, as compared with the standards expected at the Earth?22

### Case

#### Independent colony is impossible.

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Settlement of Mars—is it a dream or a necessity? From scientific publications to public forms, there is certainly little consensus on whether colonization of Mars is necessary or even possible, with a rich diversity of opinions that range from categorical It is a necessity!20 to equally categorical Should Humans Colonize Other Planets? No.21 A strong proponent of the idea, Orwig puts forward five reasons for Mars colonization, implicitly stating that establishing a permanent colony of humans on Mars is no longer an option but a real necessity.20 Specifically, these arguments are: Survival of humans as a species; Exploring the potential of life on Mars to sustain humans; Using space technology to positively contribute to our quality of life, from health to minimizing and reversing negative aspects of anthropogenic activity of humans on Earth; Developing as a species; Gaining political and economic leadership. The first argument captures the essence of what most space colonization proponents feel—our ever growing environmental footprint threatens the survival of human race on Earth. Indeed, a large body of evidence points to human activity as the main cause of extinction of many species, with shrinking biodiversity and depleting resources threatening the very survival of humans on this planet. Colonization of other planets could potentially increase the probability of our survival. While being at the core of such ambitious projects as Mars One, a self‐sustained colony of any size on Mars is hardly feasible in the foreseeable future. Indeed, sustaining even a small number of colonists would require a continuous supply of food, oxygen, water and basic materials. At this stage, it is not clear whether it would be possible to establish a system that would generate these resources locally, or whether it would at least in part rely on the delivery of these resources (or essential components necessary for their local production) from Earth. Beyond the supply of these very basic resources, it would be quite challenging if not impossible for the colonists to independently produce hi‐tech but vitally important assets such as medicines, electronics and robotics systems, or advanced materials that provide us with a decent quality of life. In this case, would their existence become little more than the jogtrot of life, as compared with the standards expected at the Earth?22

# 1NR

## T --- Courts

### 2NC --- C/I

#### 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)