### Advantage

#### The advantage is drug prices,

#### Drug prices are high now, Rajkumar 20

[S. Vincent Rajkumar](https://www.nature.com/articles/s41408-020-0338-x#auth-S_-Vincent_Rajkumar), 6-23-2020, "The high cost of prescription drugs: causes and solutions," Blood Cancer Journal, <https://www.nature.com/articles/s41408-020-0338-x> //Lex AT

Global spending on prescription drugs in 2020 is expected to be ~$1.3 trillion; the United States alone will spend ~$350 billion[1](https://www.nature.com/articles/s41408-020-0338-x#ref-CR1). These high spending rates are expected to increase at a rate of 3–6% annually worldwide. The magnitude of increase is even more alarming for cancer treatments that account for a large proportion of prescription drug costs. In 2018, global spending on cancer treatments was approximately 150 billion, and has increased by >10% in each of the past 5 years[2](https://www.nature.com/articles/s41408-020-0338-x#ref-CR2). The high cost of prescription drugs threatens healthcare budgets, and limits funding available for other areas in which public investment is needed. In countries without universal healthcare, the high cost of prescription drugs poses an additional threat: unaffordable out-of-pocket costs for individual patients. Approximately 25% of Americans find it difficult to afford prescription drugs due to high out-of-pocket costs[3](https://www.nature.com/articles/s41408-020-0338-x#ref-CR3). Drug companies cite high drug prices as being important for sustaining innovation. But the ability to charge high prices for every new drug possibly slows the pace of innovation. It is less risky to develop drugs that represent minor modifications of existing drugs (“me-too” drugs) and show incremental improvement in efficacy or safety, rather than investing in truly innovative drugs where there is a greater chance of failure.

#### Trade secrets allow middle players to reap profits by hiding information from health plan companies and regulators, Feldman 1

Robin Feldman, 6 Oct 2020, "Naked Price and Pharmaceutical Trade Secret Overreach," No Publication, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3426225> //Lex AT

Other perverse incentives flow from the structure of industry, with its central players the **Pharmacy Benefit Managers** (PBMs). PBMs are middle players between drug companies and insurance plans— including both private insurers and Medicare. On behalf of insurance plans and patients, PBMs negotiate the prices of drugs with the companies. PBMs also help the plans set formularies, which determine **whether patients will have access to a particular drug** and the terms of that access. In an ideal world, this system would allow insurance plans and patients to pay the lowest cost possible for brand-name drugs. In reality, the deals between PBMs and brand companies frequently operate to **channel patients into more expensive drugs**, with resulting long-term and short-term effects on the system. Although a full discussion of the PBMs and the drug supply chain is beyond the scope of this Article, 29 certain aspects are important for understanding the role that assertions of trade secrecy are playing in this space. In simplified form, PBMs stand between their clients (the health plans) and drug companies. Although a health plan knows what it pays when a patient buys a particular drug at the pharmacy, **the true price is hidden**. Somewhere down the line, the health plan will receive a rebate check from the PBM that includes rebates for this, and many other, drug transactions. Along the way, **PBMs pocket a large portion of the rebate dollars**—as much as $166 billion each year30 by one estimate—although the health plans are not permitted to know the size of the rebates or the portions retained. In fact, the true net price, and the terms of the agreements between PBMs and drug companies are highly guarded secrets; even the health plan’s auditors are not given full access to the agreements.31 Moreover, given that PBMs help create their clients’ formularies, PBMs and drug companies **can strike deals that may not be in the patient’s long-term interests**. Recent case allegations and press reports have described patients **who are forced to pay more for generics** than for brand name drugs and patients **completely blocked from access** to generic versions of a drug. For example, a complaint filed in 2017 alleges that Allergan’s rebate scheme for its blockbuster dry-eye drug Restasis blocked access for competing generics. 32 One Medicare plan administrator quoted in the complaint explained that with the particular scheme, **a new entrant could give its drug away for free and still would not be able to gain a foothold in the market**.33 Similarly, a recent case alleges that Johnson and Johnson launched a rebate scheme for its rheumatoid arthritis drug Remicade that induced hospitals and health plans to essentially exclude the lower-priced biosimilar. 34 One physician called practices such as these “Alice-in-Wonderland” in the drug world.35 Moreover, these deals can maximize the payments that the PBMs are able to keep, while keeping patients away from cheaper generic drugs. In addition, although PBMs represent the health plan as its clients, the PBMs receive various large payments directly from the drug companies. As well as the rebate portions mentioned above, PBMs also receive various fees from drug companies, such as “data management fees” and “administrative fees.”36 With the formulary power of PBMs, these **fees** have the potential to **encourage PBMs to drive patients toward the companies that are offering more attractive terms** to them as a middle player, regardless of whether those terms benefit patients in either the short or long-term. Again, these fees are **hidden from the health plan, from regulators, and from the public**.37 One might think that the health plans and their patients, let alone government auditors, would have the right to know the net prices they are paying for each drug and to access the terms of agreements made on their behalf. So, just how is it that these terms are so deeply hidden? PBMs and drug companies claim that net price is a **trade secret**. It is under the cloak of **trade secrecy** that this system, and its impact on rising prices, remains sheltered from view.

#### Three impacts,

#### 1] High drug prices leads to use of substandard drugs which cause antimicrobial resistance, WBG 17

World Bank Group, March 2017, “DRUG-RESISTANT INFECTIONS A Threat to Our Economic Future”, <https://documents1.worldbank.org/curated/en/323311493396993758/pdf/final-report.pdf> //Lex AT

Even as there is overuse and misuse of antimicrobials, some poor populations still lack access to effective medicines. For example, one million children are estimated to die each year from untreated pneumonia and sepsis, which can be effectively managed with antibiotics (Laxminarayan et al. 2016). Weak health care systems, AMR, and the penetration of many countries’ antimicrobials markets by substandard and counterfeit drugs— these conditions all contribute to low access to effective antimicrobials. Relatively high prices of the more powerful, later-generation, antimicrobial drugs are also a factor. The development and marketing of these drugs occurred since the first-line, relatively inexpensive antimicrobials lost their effectiveness because of AMR. High drug prices then squeeze the finite health care budgets of governments, charities, and households, resulting in diminished access to treatment, especially for the poor and vulnerable. In addition to the effect on individual health outcomes, shrinking access to effective antimicrobials hinders progress toward universal health coverage (UHC), a pillar of the Sustainable Development Goals for 2030.4 We will discuss the potential development impacts of AMR extensively in Part II. In Part IV, we will show how country action to promote UHC can simultaneously enable more effective AMR control.

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

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

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

#### 2] PBMs bar access to cancer drugs, Siddiquia 12

Mustaqeem Siddiquia, Oct 2012, "The High Cost of Cancer Drugs and What We Can Do About It," PubMed Central (PMC), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538397/> //Lex AT

Current legislation also contributes to the high cost of drugs in the United States. As written into the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Medicare is prohibited from directly negotiating with manufacturers. Negotiation, instead, is done through local contractors. In addition, an array of legislation prevents Medicare from categorizing cancer drugs with related chemical structures and indications from being considered interchangeable, thereby eliminating competition in the market for an indication. Therefore, every drug has its own payment rate and unique billing code. This prevents Medicare from using strategies such as blended reimbursement and least costly alternative, which it uses for noncancer drugs to decrease or control prices. [20](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538397/#bib20) This cedes pricing power to manufacturers, thus making Medicare a price taker.

#### Contagious Cancer is a major and legitimate threat AND causes extinction.

Johnson 16 George Johnson 2-23-2016 “Scientists Ponder the Prospect of Contagious Cancer” <https://www.nytimes.com/2016/02/23/science/scientists-ponder-the-prospect-of-contagious-cancer.html?mcubz=0> (columnist and science journalist for the New York Times, M.A. in Journalism and Public Affairs, American University)//Elmer

For all its peculiar horror, cancer comes with a saving grace. If nothing else can stop a tumor’s mad evolution, the cancer ultimately dies with its host. Everything the malignant cells have learned about outwitting the patient’s defenses — and those of the oncologists — is erased. The next case of cancer, in another victim, must start anew. Imagine if instead, cancer cells had the ability to press on to another body. A cancer like that would have the power to metastasize not just from organ to organ, but from person to person, evolving deadly new skills along the way. While there is no sign of an imminent threat, several recent papers suggest that the eventual emergence of a contagious human cancer is in the realm of medical possibility. This would not be a disease, like cervical cancer, that is set off by the spread of viruses, but rather one in which cancer cells actually travel from one person to another and thrive in their new location. So far this is known to have happened only under the most unusual circumstances. A 19-year-old laboratory worker who pricked herself with a syringe of colon cancer cells developed a tumor in her hand. A surgeon acquired a cancer from his patient after accidentally cutting himself during an operation. There are also cases of malignant cells being transferred from one person to another through an organ transplant or from a woman to her fetus. On each of these occasions, the malignancy went no further. The only known cancers that continue to move from body to body, evading the immune system, have been found in other animals. In laboratory experiments, for instance, cancer cells have been transferred by mosquitoes from one hamster to another. And so far, three kinds of contagious cancers have been discovered in the wild — in dogs, Tasmanian devils and, most recently, in soft shell clams. The oldest known example is a cancer that spreads between dogs during sexual intercourse — not as a side effect of a viral or bacterial infection, but rather through direct conveyance of cancer cells. The state of the research is described in a review, “The Cancer Which Survived,” published last year by Andrea Strakova and Elizabeth P. Murchison of the University of Cambridge. The condition, canine transmissible venereal tumor disease, is believed to have sprung into existence 11,000 years ago — as a single cell in a single dog — and has been circulating ever since. (Why did this happen in dogs and not, say, cats? Perhaps because of what the authors demurely call the dogs’ “long-lasting coital tie” — the half an hour or so that a male and female are locked in intercourse, tearing genital tissues and providing the cancer cells with a leisurely crossing.) Normally a cancer evolves in a single body over the course of years or decades, accumulating the mutations that drive it to power. But to have survived for millenniums, researchers have proposed, canine cancer cells may have developed mechanisms — like those in healthy cells — to repair and stabilize their own malignant genomes. Early on, cancer cells typically flourish by disabling DNA repair and ramping up the mutational frenzy. Somewhere along the way, the age-old canine cells may have reinvented the device to extend their own longevity. There is also speculation that this cancer may have learned to somehow modify canine sexual behavior in ways that promote the disease’s spread and survival. The second kind of contagious cancer was discovered in the mid-1990s in Tasmanian devils, which spread malignant cells as they try to tear off one another’s faces. Though it may be hard to sympathize, devil facial tumor disease threatens the creatures with extinction. With so few examples, transmissible cancer has been easy to dismiss as an aberration. But in December, scientists at the Universities of Tasmania and Cambridge reported in Proceedings of the National Academy of Sciences that Tasmanian devils are passing around another kind of cancer — genetically distinct from the first. It’s weird enough that one such cancer would arise in the species. What are the chances that there would be two? One theory is that the animals are unusually vulnerable. Driven so close to extinction — by climate change, perhaps, or human predators — the species is lacking in genetic diversity. The cells of another devil injected through a vicious wound may seem so familiar that they are ignored by the recipient’s immune system. If some of the cells carry the mutations for the facial cancer, they might be free to flourish and develop into a new tumor. But the scientists also proposed a more disturbing explanation: that the emergence of contagious cancer may not be so rare after all. “The possibility,” they wrote, “warrants further investigation of the risk that such diseases could arise in humans.” Cancer has probably existed ever since our first multicellular ancestors appeared on Earth hundreds of millions of years ago. The life spans of even the longest-lived animals may be just too brief for cancers to easily evolve the ability to leap to another body. Otherwise, contagious cancer would be everywhere.

#### 3] Court legitimacy is declining which shreds democracy—bipartisan legislation key, Brown 8-25

Tristin Brown, 8-25-2021, "The Missing Voices on the Supreme Court Commission," No Publication, <https://news.bloomberglaw.com/environment-and-energy/the-missing-voices-on-the-supreme-court-commission> //Lex AT

Just 10 months under the most conservative U.S. Supreme Court in modern history, the implications of a 6-3 conservative majority are being felt. This past term, the court dealt devastating blows to voting rights and the labor movement, siding repeatedly with the [privileged and powerful](https://www.theusconstitution.org/series/chamber-study/) at the expense of everybody else. And they’re just getting started: The court has already agreed to take on cases in the next term that could decimate abortion access, gun control laws, and more. On issue after issue, the court is on the wrong side of the democratic will, serving as a rubber stamp for corporate and conservative interests. This is by design:For decades, organizations like the Federalist Society have organized with Republican elected officials to capture the judiciary, no matter the cost. The result is a court in which a third of the justices have been appointed by a president who lost the popular vote—twice—and two-thirds have been nominated by Republican presidents, despite Democratic control of the White House for the majority of the last 30 years. ‘Fundamentally Flawed’ In response to these concerns about the court’s basic legitimacy, President Joe Biden [established a bipartisan commission](https://news.bloomberglaw.com/us-law-week/bidens-supreme-court-commission-whos-on-it-and-why-explained) to study court reform. From the outset, however, the commission has been fundamentally flawed: It is a body in which those who have been invited to participate actively benefit from the inequities being examined, while the voices left out of the conversation are those most impacted by the far-right capture of the court. The commission is largely composed of individuals who teach at elite law schools. Of 82 members and witnesses at the first two hearings, [57 were professors](https://news.bloomberglaw.com/us-law-week/professor-heavy-scotus-commission-leaves-out-real-life-people). Of those, 36 teach at either Columbia, Harvard, N.Y.U., Yale, Duke, or the University of Chicago—among the nation’s most elite law schools. Of the commissioners and panelists called thus far, only a third have been women. These are individuals who have little incentive to honestly critique the court and its threat to our democracy. They are people who appear before the court, who have vested interests in maintaining good relationships with the very institution they’re being asked to analyze.

#### The plan allows the USFG to fight for price reform, Pierson 8-12

Brendan Pierson, 8-12-2021, "PBMs sue U.S. to keep prescription drug prices hidden from public," Reuters, <https://www.reuters.com/legal/litigation/pbms-sue-us-keep-prescription-drug-prices-hidden-public-2021-08-12/> //Lex AT

(Reuters) - The Pharmaceutical Care Management Association, an organization representing pharmacy benefit managers, has sued the federal government in an effort to block a rule requiring them to disclose the net prices they negotiate with drug companies. In a [complaint](https://www.pcmanet.org/wp-content/uploads/2021/08/2021-08-12-1-PCMA-v.-HHS-Complaint.pdf) filed Thursday in Washington, D.C., federal court, the PCMA said the November 2020 rule would drive up prescription drug prices. The lawsuit targets the Department of Health and Human Services, Internal Revenue Service and Department of Labor, all of which were involved in the rule. The agencies did not immediately respond to requests for comment. Pharmacy benefit managers (PBMs) serve as intermediaries between drug manufacturers, health insurance plans and pharmacies to negotiate prescription drug prices. PBMs typically negotiate concessions below the nominal list prices of prescription drugs. The PCMA is challenging a provision of the rule set to take effect in January that would require them to disclose the historical net prices (list price minus a rebate) they negotiate with manufacturers. The information would have to be available to the public in a so-called machine-readable file, which can be processed by a computer. The rule, the organization said, threatens to "drive up the total drug price ultimately borne by health plans, taxpayers and consumers by advantaging drug manufacturers in negotiations over price concessions." Armed with information about prices negotiated between manufacturers and PBMs, the group said, manufacturers will be able to "tacitly collude with each other to increase drug prices." The group also said that the rule "offers consumers no actionable information because net prescription drug prices are not charged to consumers and never appear on a bill," and "will likely only confuse them." Furthermore, it said, ordinary consumers will not be able to interpret a machine-readable file. The PCMA alleges that the Affordable Care Act does not give the government the authority to require PBMs to disclose proprietary information. It also alleges that the requirement that the information be in a machine-readable file, which received negative comments during the notice and comment rulemaking period, is arbitrary and capricious under the Administrative Procedure Act. The lawsuit is the latest in a string of healthcare industry challenges to rules passed late in former President Donald Trump's administration aiming to curb prescription drug prices. While it is not yet clear whether President Joe Biden will seek to defend those specific rules, he has also pledged to lower drug prices. The Biden administration in February agreed to postpone a last-minute Trump administration rule aimed at lowering drug prices by restricting rebates from drug companies to PBMs, which had sued to block the rule. PhRMA, the nation's largest drug manufacturer group, also won a notable victory last December when a federal judge blocked a rule that would have tied Medicare reimbursement for some drugs to prices paid by other countries.

#### Price reform is bipartisan, Lawson 21

Alex Lawson, June 17, 2021, "Support for Lowering Drug Prices is Bipartisan," Data For Progress, <https://www.dataforprogress.org/blog/2021/6/17/support-for-lowering-drug-prices-is-bipartisan-among-voters-democrats-must-listen> //Lex AT

Republican, Democratic, and Independent voters [agree](https://socialsecurityworks.org/wp-content/uploads/2021/06/dfp_21_5_ssw_toplines-1.pdf): Drug prices are too high. 75 percent of Republicans, 86 percent of Democrats, and 81 percent of Independents are “very” or “somewhat” concerned by the prices of prescription drugs. Voters are outraged, and we want our government to take action. 77 percent of voters, including 70 percent of Republican voters, say the government should be doing more to reduce the prices of prescription drugs.

#### US democracy is key to stopping extinction,

Kendall-Taylor 16 - deputy national intelligence officer for Russia and Eurasia at the National Intelligence Council and a nonresident senior associate in the Human Rights Initiative at the Center for Strategic and International Studies in Washington, D.C.. Andrea, 7-15, How Democracy’s Decline Would Undermine the International Order, Center for Strategic & International Studies, https://www.csis.org/analysis/how-democracy%E2%80%99s-decline-would-undermine-international-order

It is rare that policymakers, analysts, and academics agree. But there is an emerging consensus in the world of foreign policy: threats to the stability of the current international order are rising. The norms, values, laws, and institutions that have undergirded the international system and governed relationships between nations are being gradually dismantled. The most discussed sources of this pressure are the ascent of China and other non-Western countries, Russia’s assertive foreign policy, and the diffusion of power from traditional nation-states to nonstate actors, such as nongovernmental organizations, multinational corporations, and technology-empowered individuals. Largely missing from these discussions, however, is the specter of widespread democratic decline. Rising challenges to democratic governance across the globe are a major strain on the international system, but they receive far less attention in discussions of the shifting world order. In the 70 years since the end of World War II, the United States has fostered a global order dominated by states that are liberal, capitalist, and democratic. The United States has promoted the spread of democracy to strengthen global norms and rules that constitute the foundation of our current international system. However, despite the steady rise of democracy since the end of the Cold War, over the last 10 years we have seen dramatic reversals in respect for democratic principles across the globe. A 2015 Freedom House report stated that the “acceptance of democracy as the world’s dominant form of government—and of an international system built on democratic ideals—is under greater threat than at any point in the last 25 years.” Although the number of democracies in the world is at an all-time high, there are a number of key trends that are working to undermine democracy. The rollback of democracy in a few influential states or even in a number of less consequential ones would almost certainly accelerate meaningful changes in today’s global order. Democratic decline would weaken U.S. partnerships and erode an important foundation for U.S. cooperation abroad. Research demonstrates that domestic politics are a key determinant of the international behavior of states. In particular, democracies are more likely to form alliances and cooperate more fully with other democracies than with autocracies. Similarly, authoritarian countries have established mechanisms for cooperation and sharing of “worst practices.” An increase in authoritarian countries, then, would provide a broader platform for coordination that could enable these countries to overcome their divergent histories, values, and interests—factors that are frequently cited as obstacles to the formation of a cohesive challenge to the U.S.-led international system. Recent examples support the empirical data. Democratic backsliding in Hungary and the hardening of Egypt’s autocracy under Abdel Fattah el-Sisi have led to enhanced relations between these countries and Russia. Likewise, democratic decline in Bangladesh has led Sheikh Hasina Wazed and her ruling Awami League to seek closer relations with China and Russia, in part to mitigate Western pressure and bolster the regime’s domestic standing. Although none of these burgeoning relationships has developed into a highly unified partnership, democratic backsliding in these countries has provided a basis for cooperation where it did not previously exist. And while the United States certainly finds common cause with authoritarian partners on specific issues, the depth and reliability of such cooperation is limited. Consequently, further democratic decline could seriously compromise the United States’ ability to form the kinds of deep partnerships that will be required to confront today’s increasingly complex challenges. Global issues such as climate change, migration, and violent extremism demand the coordination and cooperation that democratic backsliding would put in peril. Put simply, the United States is a less effective and influential actor if it loses its ability to rely on its partnerships with other democratic nations. A slide toward authoritarianism could also challenge the current global order by diluting U.S. influence in critical international institutions, including the United Nations , the World Bank, and the International Monetary Fund (IMF). Democratic decline would weaken Western efforts within these institutions to advance issues such as Internet freedom and the responsibility to protect. In the case of Internet governance, for example, Western democracies support an open, largely private, global Internet. Autocracies, in contrast, promote state control over the Internet, including laws and other mechanisms that facilitate their ability to censor and persecute dissidents. Already many autocracies, including Belarus, China, Iran, and Zimbabwe, have coalesced in the “Likeminded Group of Developing Countries” within the United Nations to advocate their interests. Within the IMF and World Bank, autocracies—along with other developing nations—seek to water down conditionality or the reforms that lenders require in exchange for financial support. If successful, diminished conditionality would enfeeble an important incentive for governance reforms. In a more extreme scenario, the rising influence of autocracies could enable these countries to bypass the IMF and World Bank all together. For example, the Chinese-created Asian Infrastructure and Investment Bank and the BRICS Bank—which includes Russia, China, and an increasingly authoritarian South Africa—provide countries with the potential to bypass existing global financial institutions when it suits their interests. Authoritarian-led alternatives pose the risk that global economic governance will become fragmented and less effective. Violence and instability would also likely increase if more democracies give way to autocracy. International relations literature tells us that democracies are less likely to fight wars against other democracies, suggesting that interstate wars would rise as the number of democracies declines. Moreover, within countries that are already autocratic, additional movement away from democracy, or an “authoritarian hardening,” would increase global instability. Highly repressive autocracies are the most likely to experience state failure, as was the case in the Central African Republic, Libya, Somalia, Syria, and Yemen. In this way, democratic decline would significantly strain the international order because rising levels of instability would exceed the West’s ability to respond to the tremendous costs of peacekeeping, humanitarian assistance, and refugee flows. Finally, widespread democratic decline would contribute to rising anti-U.S. sentiment that could fuel a global order that is increasingly antagonistic to the United States and its values. Most autocracies are highly suspicious of U.S. intentions and view the creation of an external enemy as an effective means for boosting their own public support. Russian president Vladimir Putin, Venezuelan president Nicolas Maduro, and Bolivian president Evo Morales regularly accuse the United States of fomenting instability and supporting regime change. This vilification of the United States is a convenient way of distracting their publics from regime shortcomings and fostering public support for strongman tactics.

### Solvency

#### Plan – The member nations of the World Trade Organization ought to reduce intellectual property protections for medicines by implementing thin trade secret protections in the TRIPS agreement.

#### The plan solves price abuse, Feldman 2

Robin Feldman, 6 Oct 2020, "Naked Price and Pharmaceutical Trade Secret Overreach," No Publication, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3426225> //Lex AT

With trade secret becoming a weapon of choice in contemporary intellectual property litigation, there is a growing risk that it will be used in manners far beyond its animating logic of balancing interests between parties, generally those who were in privity with one another, regarding ordinary-course business information. Thus, courts should consider borrowing from copyright to develop its own version of thinness. 185 Thin trade secret would exist when the independent economic value or creation aspect of the secret is scant, such that the item of information qualifies for protection, but only just so.186 Unlike secret formula and manufacturing techniques, thin information would exist near the margins of trade secret protection. At this distance from the core conceptualization of what is protectable, they would rest on a lighter limb of the trade secret tree. In that case, the tug of a countervailing public policy interest would have particular force. One would not want defendants to simply claim any interest in the guise of public policy, however. Thus, thin copyright could be designed primarily for circumstances in which trade secret comes into conflict with other doctrinal areas embodying their own public policies. In those circumstances, the doctrine of thin trade secret creates space for navigating the boundaries. The doctrine of thin trade secret is distinct from the notion of confidential-but-not-secret information that a relational, nonproperty conception of trade secret law would entertain. Thin trade secret operates only when the information is within the bounds of statutory trade secret status, albeit at the edge of those bounds. In this manner, thin trade secret avoids the trap of creating a vague second tier of protectable information that falls outside the bounds of statutory trade secret protection, a development which would only incentivize the aggressive litigation of weak and nebulous claims, without the framework of rules and defenses the trade secret statutes provide to adjudicate and rebut such claims. There is a risk, of course, that with the existence of thin trade secret, judges could inadvertently sweep unwarranted information into the trade secret fold. Information might be easier to declare a trade secret, given the comfort of being able to deny protection in a particular case through the public interest. Without great care, such an approach could allow the boundaries of trade secret to creep ever wider across time. All jurisprudential arenas, however, face the temptation of rules of convenience, and the antidote is the same throughout. Regardless of the doctrinal area, courts and commentators must find analyses that can be applied with logical consistency across the regime, rather than resting on handy decisions in a particular case that create distinctions without a difference.187 The concept of thin trade secret has the potential to protect trade secret regime from a societal backlash as new claims stray into uncharted territory. Without such an outlet, courts, in frustration over expansive claiming, could be tempted to slash large and ambiguous swaths of territory, generating confusion in trade secret doctrine. By delineating an area of greater force for public policy, thin trade secret would cabin analysis into a common zone for discussion and thus lessen the chance of mayhem throughout the regime. To be sure, developing a theory of thin trade secret cannot be accomplished in one step. Practical questions, such as what justifications permit application of the concept and what degree of use or disclosure in particular concepts are weighed against protection, await future commentary. One could conceivably consider borrowing from copyright to develop a fair use trade secret defense. In that vein, courts could examine whether other policies might outweigh a finding that a party’s trade secret has been used. Thinness, however, has the advantage of signaling that the supposed trade secret just barely makes it over the line, a conclusion that seems particularly appropriate for these circumstances. Although intellectual property misuse may provide a useful pathway, we believe that more narrow and targeted rules will be important. In particular, at the dawn of doctrinal development, one would be welladvised to proceed with caution. Thus, the concept of thin trade secret provides a careful approach for recognition of expanding areas of innovation without trampling the public policies reflected in doctrinal areas with which trade secret must interact. Once again, the example of drug prices and regulatory disclosure is illustrative. As described above, naked price does not fall within the bounds of trade secrets. Even if a court were to find that bare negotiated price points between PBMs and pharmaceutical manufacturers fell within the bounds of trade secrets, those rights would be achingly close to the line. At most, if pricing information in the special context of PBM agreements were deemed to be a trade secret at all, it would be a thin and untraditional right, not core intellectual property. It should pale in comparison to thick IP rights such as manufacturing process details, formula details, and other scientific work products. A thin, barely-over-the-line trade secret hardly deserves the same deference in a regulatory disclosure context as the latter types of information.

#### Regulations exist in the status quo—BUT lack of transparency is the only barrier, Feldman 3

Robin Feldman, 6 Oct 2020, "Naked Price and Pharmaceutical Trade Secret Overreach," No Publication, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3426225> //Lex AT

Public outcry over rising prices in the United States, particularly in contrast to comparable countries across the globe, has prompted numerous legislative and regulatory attempts to reform the system. More than 40 states have introduced legislation to address rising pharmaceutical pricing, with many of those bills directed at transparency in drug pricing. Transparency has been an issue for Congress and federal regulators as well, with the introduction of transparency bills and regulations.45 As state actors have sought to regulate or even investigate pharmaceutical pricing and practices, they have run into claims of trade secrecy. For example, Caremark is one of three major Pharmacy Benefit Managers that control 85% of the market. When the State of Ohio investigated in 2018 how PBMs spent state and federal funds, a third party prepared a report for the state which included details of such spending. Caremark then objected to publication of the report, filed a lawsuit seeking to suppress the report. In shrill language, the Pharmacy Benefit Manager argued that pricing information regarding prescription drugs in its contracts with entities that manage Medicaid for patients constituted “proprietary” “trade secrets,” such that publication would be “devastating,” with “severe financial harm” to its business.46 Trying to have it both ways, Caremark represented that the report it did not want the public to read found that “allegations against Caremark were not true” with respect to “preferential pricing.”47 Along the same lines, a California court enjoined the state from publishing information about a pharmaceutical company’s planned drug price increases before those prices would go into effect on the ground that for purposes of the order, the information constituted trade secrets.48

### Framework

#### The standard is maximizing expected well being or act hedonistic util.

#### Pleasure and pain are intrinsic value and disvalue – everything else regresses – robust neuroscience.

Blum et al. 18

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**Pleasure** is not only one of the three primary reward functions but it also **defines reward.** As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the **basis for hedonic theories** of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10]. Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14]. Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain’s pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals. Evolutionary theories of pleasure: The love connection BO:D Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others–when we are in love or desperately search for it. It is well established that modern biological theory conjectures that **organisms are** the **result of evolutionary competition.** In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring. Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding. There have been theories linking pleasure as a required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health. Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage. Finding happiness is different between apes and humans As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure. Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are **many brain regions**, often termed hot and cold spots, that significantly **modulate** (increase or decrease) our **pleasure or** even **produce the opposite** of pleasure— that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows— producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered. Desire and reward centers It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called “REWARD” involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation. In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the “Feel Good” response. This defined system of the brain is involved in all addictions –substance, and non –substance related. In 1995, our laboratory coined the term “Reward Deficiency Syndrome” (RDS) to describe genetic and epigenetic induced hypodopaminergia in the “Brain Reward Cascade” that contribute to addiction and compulsive behaviors [3,6,41]. Furthermore, ordinary “liking” of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for “sweet”; and in Greek, hodone is the term for “pleasure.” Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42]. Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans. In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: “liking,” “learning,” and “wanting” [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or “wanting” hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45]. Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic “high” that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between “stages,” and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations. Over many years the controversy of dopamine involvement in especially “pleasure” has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50] In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders. In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: “Humans have evolved a dopamine system that is different than the one in chimpanzees.” This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: “It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction).” Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, **there was** a **remarkable contrast in** the **neocortices**, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain’s reward system; the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson’s, schizophrenia and spectrum disorders such as autism and addiction or RDS. Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans’ ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible alterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shilting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual’s physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

#### Extinction o/ws under any framework, even under moral uncertainty – infinite future generations

Pummer 15 — (Theron Pummer, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford, “Moral Agreement on Saving the World“, Practical Ethics University of Oxford, 5-18-2015, Available Online at http://blog.practicalethics.ox.ac.uk/2015/05/moral-agreement-on-saving-the-world/, accessed 7-2-2018, HKR-AM) \*\*we do not endorse ableist language=

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

#### Prefer additionally –

#### 1] Death is bad and outweighs – a) agents can’t act if they fear for their bodily security which constrains every ethical theory, b) it destroys the subject itself – kills any ability to achieve value in ethics since life is a prerequisite which means it’s a side constraint since we can’t reach the end goal of ethics without life

#### 2] Actor spec—governments must use util because they don’t have intentions and are constantly dealing with tradeoffs—outweighs since different agents have different obligations—takes out calc indicts since they are empirically denied.