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#### Pharma patent monopolies drive hormone shortages and price hikes now

Fragnito 20 [Maddalena Fragnito, 2020, "Commoning Molecules: Decolonising Biological Patents By Gender Hacking Protocols," Journal of International Women’s studies, https://hcommons.org/deposits/item/hc:32817/, accessed 9-7-2021] BCortez

Basic Rights Shortage13 Since both the production pathways of extraction and hormone synthesis are patentable subjects, nowadays, pharmaceutical companies retain all power over hormone molecules. This route to patenting creates basic rights shortages making transgender people reliant on global drug markets that may exclude them from accessing the drugs they need. This is the case during summer 2019 when testosterone disappeared from Italian pharmacies. In one of their latest bulletins (January 2020), the Italian Drug Agency (AIFA) confirms the temporary unavailability of most hormonal drugs, such as Nebid (Bayer), Testoviron (Bayer) and Sustanol (Aspen). When the supply of a drug is restricted, a country may lose access if the limited supplies are diverted by parallel trade, a practice that takes advantage of the price differences between different markets. Under WTO public health regulations, in fact, if there is a public health emergency, countries can use parallel trade flexibilities to import drugs. The problem arises when the drug is in short supply. By making less supply than is needed globally, monopolies can drive up the price by selling the whole supply to the country offering the highest price. This phenomenon forces the latter to buy the product – under “Emergency Conditions” and at an increased cost. The phenomenon, which generates discontinuous hormones intake for transgender people who need it, occurs in Italy alongside most parts of the world (Smiley et al. 2017). A disrupted hormone intake causes higher risks of thrombosis and chronic osteoporosis – not to mention depression and suicide rate due to the impossibility of bodily self-determination.∂ Another aspect to take into account is that, because of the restrictions on importing, countries can only import the drug for essential and emergency treatments (Class A drugs, listed as life-saving) and not for those considered to be less urgent and essential, such as the sextransitioning medical pathway which is not among the authorised conditions for the use of any medicinal product. This invisibility produces as an effect the fact that hormones are difficult to catalogue in Class A (life-saving drugs). On the contrary, the present hormones’ classification (Class C), which is authorised for – non life-saving drugs for – cisgender14 people’s hormonal therapies, do not protect transgender people from the consequences that discontinuous hormone intake can generate. ∂ Moreover, another factor that further complicates this classificatory void is related to the lack of data. For instance, in Italy, under the current legislation, AIFA can consider the introduction of a new therapeutic indication for a drug only if the pharmaceutical company that holds the marketing authorisation (in Italy, AIC) submits a request for an extension of therapeutic indications supported by related scientific evidence. However, there are no systematically collected datasets because gender transition does not follow a specific medical procedure: a perfect vicious circle. As a consequence, medical research and access to medication and care are affected, as well as increased risk to transgender people during emergencies. In summary, what emerges from this phenomenon is that the so-called “gender dysphoria”15 is considered to not require an essential treatment. Thus, in the context of hormone patent monopolies, the institutional classification of what is essential and what is an emergency – and to whom – threatens to put the needs of transgender people for hormone treatment into an invisible place. Thus, two issues have arisen so far. On the one hand, the question of consent around the contradiction of being all exposed – although at different levels – to hormonal pollution, while at the same time encountering serious difficulties when desiring sex hormonal therapy. On the other hand, the question of how this same contradiction, and its related problems, entwines with the strict regulative system of hormones’ patents. This is the main context in which DIWO biohacking workshops dealing with hormone knowledge, awareness, production are rising and, by proposing a more inclusive definition on what is essential and to whom, are spreading.

#### Hormone therapy prices are skyrocketing – companies charge whatever they want and insurance can’t solve. The plan is also key for life saving breast cancer, menopause, and prostate cancer medicines.

Northwest Pharamacy ’20 [Why is Hormone Therapy So Expensive in the United States? March 23, 2020, https://www.northwestpharmacy.com/special-features/why-is-hormone-therapy-so-expensive-in-the-us.aspx NorthWestPharmacy.com is the most reviewed and independently five-star rated online pharmacy in the world. We've been a leader in the delivery of affordable high-quality pharmaceuticals for over a decade. During this time, we have fulfilled more than 3 million prescriptions! That's why the more than 400,000 of our customers who have publicly reviewed us will agree that the NorthWestPharmacy.com experience is synonymous with savings, safety and service.] [SS]

American consumers from all walks of life and economic backgrounds have been dealing with the outrageous and increasingly out of control costs of prescription medication for years, and the problem only seems to be getting worse. From the skyrocketing cost of medications like asthma pumps to hormone therapy, more and more Americans are struggling to get the medications they need. As too many people are finding out, the high price of prescription drugs in the U.S. can have serious and life-threatening consequences. More and more, Canadian pharmacies are becoming a beacon of hope to Americans who can’t afford to pay the inflated prices the pharmaceutical companies are charging in the United States. Due to a lack of regulation or any significant oversight of the pharmaceutical industry on the part of the American government drug pricing, drug companies are free to charge whatever they want in the American market, which typically results in the same drugs costing much more than they do just across the border in Canada. Hormone Therapy Costs in the United States Hormone therapy includes a broad category of medications and therapies used by both men and women. One of the more common and well-known uses for hormone therapy (sometimes also referred to as hormone replacement therapy) is for women going through the process of menopause. As the body ages, the production of certain hormones slows down and diminishes, resulting in a number of symptoms and side effects that can affect a person’s health and overall quality of life. For women, the end of the reproductive phase means that the body produces less of the hormones estrogen and progesterone. This can lead to a number of symptoms and side effects including: Hot flashes Night sweats Chills Sleep problems Weight gain Mood irregularities Depression Osteoporosis Sexual dysfunction Cardiovascular disease Every woman experiences menopause differently, and the symptoms can range from mild to severe depending on the individual. But for some, the symptoms are so severe that hormone therapy, which helps to stabilize the body's estrogen levels as they naturally decline, is an essential treatment. According to the US National Library of Medicine National Institutes of Health (NIH), there are approximately 100 estrogen-only and estrogen-progesterone combination therapies available for women who seek treatment for menopause symptoms. Despite the fact that only about a quarter of the women who experience menopause symptoms seek treatment every year, the NIH estimates that annual US expenditures on estrogen-only and estrogen-progesterone combination hormone replacement therapies range from $264 million on the low end to over $6 billion. Individual prices vary depending on the type of hormone therapy and the specific drug, but the annual cost for some hormone medications can be more than $1,000 for some women. Hormone Therapy and Cancer Menopause is just one medical condition where hormone therapy is prescribed. According to the American Cancer Society, a form of hormone therapy is also used to help treat some forms of breast cancer. Known as hormone receptor positive breast cancer, some tumors have proteins that attract estrogen and progesterone, which then fuels the tumors and causes them to grow and spread. For women with hormone receptor positive breast cancer, hormone therapy drugs are used to either block or limit estrogen from feeding tumor growth. Some of the most common hormone therapy drugs prescribed to treat this type of breast cancer include: Tamoxifen Fulvestrant (Faslodex) Aromatase inhibitors (AIs) Goserelin (Zoladex) Leuprolide (Lupron) Megestrol acetate (Megace) Most women take hormone therapy treatments like Tamoxifen for five to ten years after surgery to help reduce the risk of the cancer returning (recurrence). Tamoxifen is the generic version of Nolvadex/Soltamox, and is generally less expensive than aromatase inhibitors. The monthly cost of aromatase inhibitors like anastrozole (the generic version of Arimidex), letrozole (the generic version of Femara), and exemestane (the generic version of Aromasin) can vary wildly, from just a few dollars to over a $1,000 depending on the prescription and insurance plan. Even on the lower end of the price spectrum, many of the women that rely on hormone therapy to recover from breast cancer and stay cancer free are looking at thousands of dollars for a single medication (hormone therapy is usually prescribed in conjunction with surgery and other cancer treatments, which are also notoriously expensive). As potentially lifesaving drugs that many women need to take for many years, the price tag for hormone therapy to treat breast cancer can be a big concern for many American women, especially if they are under or uninsured. Hormone Therapy for Men Hormone therapy is not just for women. According to the Prostate Cancer Foundation, approximately half of all men with prostate cancer are treated with hormone therapy. ADT (androgen deprivation therapy) lowers testosterone levels in the body. Like estrogen in hormone receptor positive breast tumors, testosterone can fuel cancer cells in the prostate in men. The Soaring Costs of Hormone Therapy in the United States Dealing with out of control prescription drug prices has unfortunately become a way of life for millions of Americans, even with health insurance that includes some form of prescription drug coverage. Over the last decade, the out-of-pocket cost of everything from allergy medication to hormone therapy has increased exponentially due to factors like pharmaceutical industry profiteering, and expensive or inadequate health insurance coverage. However, for people that rely on hormone therapy like estrogen to manage the uncomfortable and disruptive symptoms of menopause, the problem goes beyond basic health insurance coverage or lack thereof. In many cases, an insurance plan can technically cover a medication, but categorize it in a higher priced "tier," making it more expensive — and unaffordable — for many women due to higher copays or reduced coverage, even when they have health insurance. Uneven Coverage and Lack of Uniformity in Drug Pricing So how is it possible that prescription drugs and common medications are so much more expensive in the United States than in Canada? The Canadian market has strict quality and safety standards for prescription drugs and medications, and the drugs sold in Canadian pharmacies are manufactured by most of the same companies that sell to the American market. The only difference in most cases is the cost. In Canada, the government negotiates prices and sets limits on how much pharmaceutical companies can charge, so not only do medications stay affordable, but the prices are uniform and cost the same for all Canadians, regardless of their income, family size, age, or the geographical area in which they live. The Canadian pricing model also protects consumers from having to make some of the impossible choices that ordinary Americans are faced with every day when they can't afford the medicine they need: from going into debt, selling their possessions, to going bankrupt in many cases. Hormone Therapy is not a Luxury For women that live past the age of 50, menopause is an inevitable fact of life, and with at least half of women experiencing menopause symptoms that require treatment, hormone therapy is a necessity not a luxury. The same holds true for potentially life-threatening diseases like breast and prostate cancer, which don't discriminate according to a person's ability to afford the medications and treatment they need. Even after the Affordable Care Act (Obamacare), nearly half of all Americans (49% according to the Kaiser Foundation) have employer sponsored health insurance plans. The truth is that American consumers have very little, if any, real choice when it comes to their health care and prescription drug coverage. While some employers do offer different tiers of coverage, employees are basically "stuck" with the plan their employer chooses to offer, which is usually based more on how much money the company can save as opposed to the nature of the coverage (and the quality) that the plans actually offer. Employees also have no say if their company decides to change plans, altering everything from prices and level of coverage to whether or not they can keep seeing their doctor or using the same pharmacy to fill their prescriptions. Erratic Pricing Models Make Some Medications More Expensive for Some In a perfect world (or practically everywhere except for the United States), the cost of a medication like Vagifem, which helps to counter the effects of estrogen loss during and after menopause, would be as straightforward as any other essential product where the price is uniform and everyone pays the same price. However, in the U.S., where the government doesn't negotiate pricing with the pharmaceutical companies or set price limits to protect consumers from extreme markups and price hikes, it can be hard for individuals to predict and therefore budget for the medications they need. By and large, prices are determined by the type of coverage someone has, whether there's a cheaper generic version of the medication available, as well as coupons and discounts for some consumers depending on their insurance, level of coverage, and other qualifying circumstances. Two women both taking Vagifem or birth control pills may have very different costs depending on whether or not they’re insured, and the type of insurance they have. Paying More for the Same Medication The pharmaceutical industry and their allies have a long list of excuses to justify the cost of prescription medications in the United States, which are the highest in any market in the developed world. One rationale is that higher list prices are necessary to support research and development for new medications and treatments. However studies have found that industry profits stem from drastic price increases to existing drugs, not necessarily from newer or more effective drugs entering the market. For most prescription drugs, the drastic price increases that Americans have been forced to shoulder over the past decade have far outpaced both inflation and the pharmaceutical industry's research and development investments, which are estimated to be less than 20%. Inflation is about 2%. So where is the rest of the money going? Even modest yearly price increases on established medications average at least 6%, three times the average rate of inflation. According to industry and policy experts, there are little to no research and development costs and activities associated with medications once they have been approved by the Food and Drug Administration (FDA), and the bulk of the price increases have been attached to medications that have been on the market for years or even decades. Prescription drug prices in the U.S. ultimately adhere to the for-profit model where medications and health care are treated like commodities to capitalize on rather than essential public services like utilities or even clean water. While drug manufacturers often point to the fact that they offer rebates and negotiate prices with pharmacies and health care administrators and intermediaries so that consumers are not actually paying the list price on every medication, the system still makes even basic medications prohibitively expensive and out of reach for millions of Americans. To learn more about ordering prescription medications from an international and Canadian pharmacy and how to shop for lower priced medications online, contact us at NorthWestPharmacy.com for more information. Call us toll free at 1-866-539-5330 or visit us online.

#### The impact is large – Hormone therapy is statistically proven to causally increase queer well-being

Costa and Colizzi 16 [Rosalia Costa1, 2016, "The effect of cross-sex hormonal treatment on gender dysphoria individuals’ mental health: a systematic review," PubMed Central (PMC), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4977075/, accessed 9-9-2021] BCortez

Cross-sex hormonal treatment represents a main aspect of gender dysphoria health care pathway. However, it is still debated whether this intervention translates into a better mental well-being for the individual and which mechanisms may underlie this association. Although sex reassignment surgery has been the subject of extensive investigation, few studies have specifically focused on hormonal treatment in recent years. Here, we systematically review all studies examining the effect of cross-sex hormonal treatment on mental health and well-being in gender dysphoria. Research tends to support the evidence that hormone therapy reduces symptoms of anxiety and dissociation, lowering perceived and social distress and improving quality of life and self-esteem in both male-to-female and female-to-male individuals. Instead, compared to female-to-male individuals, hormone-treated male-to-female individuals seem to benefit more in terms of a reduction in their body uneasiness and personality-related psychopathology and an amelioration of their emotional functioning. Less consistent findings support an association between hormonal treatment and other mental health-related dimensions. In particular, depression, global psychopathology, and psychosocial functioning difficulties appear to reduce only in some studies, while others do not suggest any improvement in these domains. Results from longitudinal studies support more consistently the association between hormonal treatment and improved mental health. On the contrary, a number of cross-sectional studies do not support this evidence. This review provides possible biological explanation vs psychological explanation (direct effect vs indirect effect) for the hormonal treatment-induced better mental well-being. In conclusion, this review indicates that gender dysphoria-related mental distress may benefit from hormonal treatment intervention, suggesting a transient reaction to the nonsatisfaction connected to the incongruent body image rather than a stable psychiatric comorbidity. In this perspective, timely hormonal treatment intervention represents a crucial issue in gender dysphoria individuals’ mental health-related outcome.

#### Thus, the plan: The member nations of the World Trade Organization ought to reduce patents for sex-hormonal agents.

#### The plan solves – breaks down hormone monopolies and expands access.

Fragnito 20 [Maddalena Fragnito, 2020, "Commoning Molecules: Decolonising Biological Patents By Gender Hacking Protocols," Journal of International Women’s studies, https://hcommons.org/deposits/item/hc:32817/, accessed 9-7-2021] BCortez

Parallel trade markets affect transgender people's access to medication and care as a direct consequence of a monopoly-based system. To strengthen this monopoly, there is the fact that every new drug, when patented, cannot be manufactured or sold by others for at least 20 years. Without competition, pharmaceutical companies can decide the price they want by claiming that the high costs are caused by research and development costs. However, as there is no transparency about how these companies invest their capital (or benefit from the appropriation of public research), no one can verify the plausibility of these claims. Although several civil society groups, projects and organisations such as “Fix the Patent Laws”16, “Fair Pricing of Medicines”17, “Treatment Action Campaign”18 and “Knowledge Ecology

International”19, have been working for years on accessibility to medical treatments, governments have not done much to defend themselves against pharmaceutical monopolies, or to strengthen the discourse in favour of greater access to care. That said, sticking to the current system will never bring universal access to drugs: some will always be able gain access while others cannot. This is what “Open Source Pharma”20, a mixed community who seeks new ways to discover drugs, states when promoting to: “create a movement that includes existing initiatives and develop an alternative, comprehensive, opensource pharmaceutical system driven by principles of openness, patient needs, and affordability”. In the context of sex hormone therapies, to abolish patents would help to alleviate hormonal shortage and its effects on the transgender community. Also, it would allow companies’ patent monopolies to be bypassed by engaging in more crucial research on the synthesis of hormonesfor-transition. Thus, the abolition of all hormone patents would mean to invest in practices of commoning science, involving the spread of DIWO biohacking workshops such as those described above, and strengthening their relationship with the public healthcare systems. Overall, these are the main reasons why DIWO biohacking workshops, by self-producing and administering hormones, align to the “open-source pharmaceutical system” promoted by the Open Source Pharma network – besides trying to regulate and modify the margins of a monopoly-based system throughout the many connections with existing social movements for access to healthcare. Unfortunately, the traditional arguments in favour of patents are deeply diffused and well described by Jones’s quote, which comes from its “Introduction to Economic Growth” (2002). Economic growth is linked to the establishment of a relatively secure system of intellectual property rights. However, over the last twenty years, the notion of a direct link between intellectual property protection and rates of innovation has been increasingly questioned (HilairePérez et al. 2013). Scepticism towards patents among economists was instigated by some of the early empirical studies on the effectiveness of patent protection. For instance, some studies by Mansfield (1986) and Levin et al. (1987) have highlighted that, in most industries, patents were not perceived as useful tools for protecting innovations. Consequently, firms typically worked with appropriability strategies that did not contemplate any resort to patent protection. This finding has been corroborated by later research both in the US (Cohen et al. 2000) and Europe (Arundel and Kabla 1998). Another fascinating quantitative snapshot is provided by Moser (2005), who surveyed inventive activity undertaken outside the patent system in the mid-nineteenth century. Furthermore, empirical studies have also shown the possible negative impact of patents on subsequent technological developments. For instance, when technological change is cumulative, that is, when innovations are directly linked to previous ones, durable patent protection can have highly harmful effects on the rate of innovation (Lerner 2009). Following this stream of research, some recent economists of innovation have attempted new theoretical appraisals of the welfare costs and benefits of patent protection. So far, one of the most influential contributions in this vein is probably that of Boldrin and Levine (2008) who, on the strength of their analysis, argue for the abolition of all patent systems. In synthesis, the abolition of the patent systems could allow sex hormone therapies to gain sovereignty instead of upholding a monopoly-based system which pretends to do so being the patron and shaper of our needs and desires; to promote a cultural and scientific more-inclusive-reflection of what is essential treatment and for whom and, consequently; to widen access to transgender healthcare.

#### Vagifem proves – the plan causes prices to plummet and increases insurance coverage.

Thomas ’18 [Prices Keep Rising for Drugs Treating Painful Sex in Women, Katie Thomas, June 3 2018, <https://www.nytimes.com/2018/06/03/health/vagina-womens-health-drug-prices.html>] [SS]

Some said Imvexxy had a role to play. Many women are worried about taking estrogen because of earlier studies that showed taking oral hormones carried serious risks. The lower dose may allay those concerns, although other vaginal estradiol products have also shown that they do not significantly increase estrogen levels throughout the body. All of the products, including Imvexxy, carry an F.D.A. warning that they can increase the chance of developing cancer and other serious disorders. But several women’s health experts said those risks have never been substantiated and they have been lobbying the F.D.A. to remove it. “Hopefully this will be a solution for the woman with breast cancer who is going without,” Dr. Streicher said. TherapeuticsMD paid her to lead one focus group for women that discussed sexual health and did not mention Imvexxy, she said. ADVERTISEMENT Continue reading the main story “If we were having this conversation in the context of drug prices being reasonable across the board — hey, good news,” said Cynthia Pearson, the executive director of the National Women’s Health Network, a consumer group. “It’s just infuriating that the price has gone up and up and up for no good reason.” She said the issue has not gotten more attention because “how many people will say ‘vagina’ in a public setting?” Some companies are using a playful marketing approach, signaling the issue is not as taboo as it once was. The website of Imvexxy — which rhymes with sexy — features an image of a ripe, juicy peach, boasting the product is “distinctly designed for sweet relief.” A similar product, Intrarosa, which does not contain estradiol, features a photo of a nude older woman, her head thrown back in pleasure. Some of these products may soon come down in price. In October 2016, a generic of Vagifem, called Yuvafem, entered the market at a slightly reduced list price. Then, in July of last year, Teva Pharmaceuticals began selling a second generic at an even cheaper price. But the pharmacy cash price for Teva’s product — $163.91 for a month’s supply of eight tablets in May — is still higher than what Vagifem cost in 2015, according to the GoodRx analysis. If more generic manufacturers enter the market, the price could tumble more and Vagifem could become an inexpensive drug like many cholesterol or blood pressure medicines. The same could become true for Estrace cream, which lost its patent protection at the end of last year and now has several generic competitors. With two generics for Vagifem now available, the drug companies are most likely negotiating big discounts with insurers, meaning patients with coverage may see their costs drop. Elizabeth Traynor, an illustrator in Guntersville, Alabama, had tried virtually every estradiol product and balked at the prices, frequently doing without. But she recently called her insurer, the Government Employees Health Association, and learned she would have to pay $20 for a three-month supply of Yuvafem. “It’s about time,” she said. “Hooray!” Estradiol has been around for so long that it has survived several rounds of debate over high prices. In 1959, a Senate inquiry found that the drug maker Schering, now part of Merck, had marked up estradiol — which comes in many forms — by more than 7,000 percent over the cost of materials. In an echo of modern-day industry talking points, a Schering executive was quoted in an article in The New York Times, saying the high prices were necessary to finance new medical research. “The consumers of today must contribute to the benefits which the future will bring,” the drug executive said.

#### High Drug Prices for vital medicines pushes people into poverty – our internal is causal.

Hoban 10 Rose Hoban 9-13-2010 "High Cost of Medicine Pushes More People into Poverty" <https://www.voanews.com/science-health/high-cost-medicine-pushes-more-people-poverty> (spent more than six years as the health reporter for North Carolina Public Radio – WUNC, where she covered health care, state health policy, science and research with a focus on public health issues. She left to start North Carolina Health News after watching many of her professional peers leave or be laid off of their jobs, leaving NC with few people to cover this complicated and important topic. ALSO cites Laurens Niens who is a Health Researcher at Erasmus University Rotterdam)//Elmer

Health economist Laurens Niëns found that drugs needed to treat chronic diseases could be considered unaffordable **for many people in poor countries**. Medicines can be expensive and often make up a large portion of any family's health care budget. And the burden can be even greater for people in poor countries, where the **cost of vital medicines can push them into poverty**. The problem is growing as more people around the world are diagnosed with chronic diseases such as high blood pressure and diabetes. Being diagnosed with a chronic disease usually compells patients to seek treatment for a prolonged period of time. That increases the eventual price tag for health, says health economist Laurens Niëns at Erasmus University in the Netherlands. Niëns examined medication pricing data from the World Health Organization and also looked at data from the World Bank on household income in many countries. Using the data, he calculated how much people need to spend on necessities such as food, housing, education and medicines. "The medicines we looked at are medicines for patients who suffer from asthma, diabetes, hypertension and we looked at an adult respiratory infection," Niëns says. "Three conditions are for chronic diseases, which basically means that people need to procure those medicines each and every day." Niëns focused on the cost of medicine for those conditions. He found the essential drugs could be considered unaffordable for many people in poor countries - so much so that their cost often pushes people into abject poverty. "The proportion of the population that is living below the poverty line, plus the people that are being pushed below the poverty line, can **reach up to 80 percent** in some countries for some medicines," Niëns says. He points out that generic medicines - which are more affordable than brand-name medications - are often **not available in the marketplace**. And, according to Niëns, poor government policies can drive up the cost of medications. "For instance, a lot of governments actually tax medicines when they come into the country," he says. "[They] have no standard for the markups on medicines through the distribution chain. So often, governments think they pay a good price for the medicines when they procure them from the producer. However, before such a medicine reaches a patient, markups are sometimes up to 1,000 percent."

#### Income Inequality is an existential and security threat – COVID puts us on the brink.

Silk 20 Matthew Silk 4-6-2020 “The Pandemic and the Threat of Income Inequality” <https://www.prindlepost.org/2020/04/the-pandemic-and-the-threat-of-income-inequality/> (PhD in philosophy from the University of Waterloo)//Elmer

The United States has one of the **highest levels of** **wealth inequality** in the developed world. It is not new information to most people that the top 1% of income earners make 30 times the income of those in the middle. The top 10% of families held 76% of the wealth in the United States in 2013. Over the past ten years many have tied this information to national security. An article from 2013 notes that this disparity, along with a lack of employment, could **lead to** an **increase in** youth **gangs**, property **crime**, **and** higher **prison** populations. Another from 2018 similarly points to the potential for higher crime. Despite these concerns, others have argued that we should not see income inequality as a problem. In 2013, the Cato Institute argued that the threat of civil unrest owing to income inequality is negligible and has no relationship to the concept of national security, noting “it is difficult to credit the view that inequality poses a security threat unless ‘security’ is completely redefined.” In 2017, the Heritage Foundation published a report arguing that there is little evidence that the very rich and the very poor have significantly divergent interests or influence over policy. Yet, one event that the articles I have cited did not seem to see coming was an existential threat like a viral pandemic. It is well known from past cases that viral outbreaks can be particularly harsh on the poor. During the 1918 Spanish flu epidemic, the poor were significantly affected by the first wave. During the current COVID-19 epidemic we see this pattern repeating. Given that many people are now staying and home and not working, income is falling. Half of the nation would not have $400 if needed for an emergency which means that they are going to have a difficult time paying their rent and other living expenses. The result is going to be that millions will not be able to pay and could face evictions. While some politicians and governments are working to prevent this, that hasn’t stopped the calls for rent strikes during the pandemic. This means that during a time when social distancing is necessary, evictions and increases in the number of homeless will make the spread of the virus more difficult to contain. In addition, wealth inequality is having a direct effect on healthcare. Roughly 10% of Americans did not have health insurance before the pandemic and most of these are likely to live in poverty. Without insurance, people are more likely to want to treat themselves at home or to avoid seeing a doctor. Now, millions of Americans who rely on employment benefits for coverage may now lose it. As many as 14 million may lose their jobs by summer. Those most vulnerable for losing their jobs are likely to work in the service and retail industries and are more likely to be low-wage workers. The cost of treatment for COVID-19 can be up to $35,000. This means that millions of Americans who could already not afford to pay rent can definitely not afford the potential cost of treatment. Indeed, there are already reports of potential deaths owing to lack of insurance. What this means is that you now have large numbers of people who, despite the risk of increasing the spread of COVID-19, now still need to work in order to prevent losing their homes and their coverage. You have people who have now lost their jobs and their healthcare coverage less likely to seek medical care if they need it or to follow health protocols prescribed by governments to prevent the spread of the virus. This means that less will come forward for testing and less treatment of those who may have contracted COVID-19. As Joseph Eisenberg, chair of epidemiology at the University of Michigan notes, “People will go a lot longer since they don’t have access to healthcare…that both means they’ve been in the community more and been transmitting more, and when they get to the hospital their prognosis is going to be a lot worse.” So, in addition to a health crisis, there will also likely be an insurance crisis and a housing crisis owing to the economic situation of those worse off. In addition, many of the jobs now deemed essential to keep supply chains going are those filled by the working poor. These include those who work in the food industry, custodial staff, many others including grocery stores staff. These people, in addition to staff employed in Amazon warehouses, are worried about a lack of protection against the virus. Amazon workers are calling for a strike to demand protection. Grocery store staff are worried about a lack of protective equipment as well. Despite efforts to protect these employees, several of them have now contracted the virus. At first many of these employers were not even offering paid sick leave and now that they are, there is still confusion. While many of these employers are now offering pay raises in response to the crisis, this still means that we are in a situation where most of us are now depending on low income workers to keep deliveries coming and to ensure that there is still food on the store shelves. These individuals are the very same who are now at a higher risk of contracting the virus and simultaneously less likely to seek treatment for it. How does all of this relate to national security? **Income inequality has** **exacerbated the healthcare crisis, will contribute to** the eventual **economic** **and financial crises, and** has **resulted in** a **situation** **where** **society** is now **counting on** many of the **poorest** people **to continue to risk their health** in order **to ensure supply lines** continue to function, all **while** **being more likely to be hurt by the pandemic.** Now only does this increase the risk of **social unrest**, it makes handling the pandemic more difficult. **Income inequality is** now **an existential threat** to national security. While it may be easy to think that once the pandemic ends this threat will pass, a warming climate means the range of disease-carrying animals is increasing; this may not be the last major pandemic we will face. While it is cynical to think that we should only deal with a problem like income inequality because of this, the fact that the **disparity between the rich and poor** **is a national security threat** reminds us that there is a moral significance for everyone to do something about it.

#### The plan prioritizes trans-dignity. De-prioritizing this framework is *violently unethical* and *denies value to life*.

Francois ’17 et al; Aderson B. Francois currently serves as the Director for Institute for Public Representation Civil Rights Law Clinic as well as a Professor of Law at The Georgetown Law School. Prior to joining the Georgetown faculty, Professor Francois directed the Civil Rights Clinic at Howard University School of Law, where he also taught Constitutional Law, Federal Civil Rights, and Supreme Court Jurisprudence. Professor Francois received his J.D. and B.A. from New York University. While the author serves as the Counsel of Record for this Amicus Brief. it is important to note that this Amicus Brief is submitted on behalf of REAGAN GREENBERG, ACHIM HOWARD, ALEXA RODRIGUEZ, JEYMEE SEMITI, AVATARA SMITH-CARRINGTON, SAVANNA WANZER, & SAM WILLIAMSON – who, identity as transgender people and individuals whose gender identity may not fit the rigid categorization of male or female. Amicus Brief - Gloucester County School Board, Petitioner, v. G.G., by his next friend and mother, Deirdre Grimm, Respondent. On Writ of Certiorari to the United States Court of Appeals for the Fourth Circuit - BRIEF OF AMICI CURIAE REAGAN GREENBERG, ACHIM HOWARD, ALEXA RODRIGUEZ, JEYMEE SEMITI, AVATARA SMITH-CARRINGTON, SAVANNA WANZER, & SAM WILLIAMSON IN SUPPORT OF RESPONDENT - Available at SCOUTS blog – along with all amicus briefs on this matter- March – modified for language that may offend – - #CutWithKirby - <http://www.scotusblog.com/wp-content/uploads/2017/03/16-273-resp-amicus-greenberg.pdf>

* **Bracketed for ableist language**

Human dignity is at the core of this case. While this is not a constitutional case, the Court's reliance on human dignity bears repeating as its decision here so obviously implicates it. Transgender people are people and are deserving of treatment that upholds basic values of human dignity. For transgender people, a right to human dignity is the right to be accepted for who they are, to be valued, respected, and ethically treated, irrespective of their gender identity. For transgender people of all ages, recognizing that their gender does not match the gender they were assigned at birth is an enormous burden to carry when the institutions they navigate refuse to affirm their true identity. The ability to self-determine what gender best aligns with their identity, and then be acknowledged as such, is at the crux of bodily integrity.

The reality of transgender people's lives is a daily reminder that virtually everything in the world is organized in a way that tells them that their identity is not normal.

I often tell people that my body has been inextricably linked to violence since birth. On its face, this statement appears to be overdramatic. People begin to dissect and regurgitate a list of my privileges in attempts to ease their guilt, while simultaneously stripping me of my voice. You see, the violence I speak of is not that which we have been socialized to naturally fear but instead one that is systemically normalized. This is the type of violence that is often disregarded and negated because conversations around privilege and oppression are uncomfortable and for many, irrelevant.

Avatara Smith-Carrington, Black, Age 24, Baltimore, MD

Upon birth, an infant is designated a gender of either male or female.26 The infant then spends their youth adhering to socially constructed guidelines on how to present themselves as male or female.27 Their forms of identification—birth certificate, driver s license, passport, etc.—reflect the gender assigned at birth. In public forums, they face gender-segregated choices, such as joining a male or female soccer league, or becoming a boy scout or a girl scout, and those decisions are pressured by what is written on a piece of paper handed to thein at birth. This standardized, presumptive process is a much more oppressive system to navigate for those whose gender identity does not align with the gender assigned at birth.

Transgender people face a complicated reality in great part because, from time immemorial, clinicians and academics have made transgender individuals the "objects of their inquiry,"28 using language that at times implicitly but far more often explicitly burdens transgender people with the mark of being "abnormal." Transgender people live in a society where "people must be willing to be pathologized" in order to have their gender identity socially and legally affirmed.29 Society today deems transgender people's gender identities, expressions, and sex "less natural and less legitimate" than those of non-transgender people.30 Transgender people are expected to carry not only medical prognosis, but also a physical appearance that passes as "male" or "female" in the eyes of non-transgender people.

Even among well-meaning people, non-transgender attributes are "simply taken for granted" and "assumed to be natural or normal."31 Although the assessment of a person's gender, for the majority of people, tends to be in agreement with that person's gender identity, this is not the lived experience of transgender people. Most non-transgender people "remain oblivious to the subjective nature of gendering, primarily because they themselves have not regularly had the experience of being misgendered."32 One need look no further than the amici curiae briefs filed after the Petitioner filed its brief, such as the one by Safe Spaces for Women, to see evidence of a world in which the only "normal" perspective is that of non-transgender individuals. When calling specific attention to violence against women by men, counsel for Safe Spaces for Women did not include transgender women in their efforts to "ensur[e] that the voices of women who have suffered sexual abuse are heeded when policies are made that may directly affect their physical, emotional, and psychological well-being."33 This is a silencing of transgender identities and voices.

Because of the assumptions created by our non-transgender frameworks, non-transgender individuals draw the conclusion that everyone they meet is also non-transgender.34 The mentality of assuming everyone you meet is non-transgender trickles into every aspect of life, from casual interactions with people on the street, to how coworkers address each other in the workplace. As such the majority of people are ~~blind~~ [ignorant of] to the struggles of transgender people, and the legitimacy of the struggle transgender people living in the United States face is obfuscated by that [ignorance] ~~blindness~~. When people come out as transgender, many healthcare providers,35 employers, and educational institutions perpetuate violence against them by refusing to affirm their gender identity. When this lack of affirmation takes the form of exclusion— cutting off transgender individuals from work, health services, classes, or other essential structures—there can be no question that such exclusion is an act of violence. Even when transgender people are able to access non-affirming institutions, they are left with two options: (1) perform an identity that is not their own, which strips them of human dignity; or (2) defy the institution and face punishment, which is quite literally violent. Forcing a transgender individual into performing their gender assigned at birth forces that individual to live in a skin that is not their own. The inability of a transgender person to be acknowledged as the gender identity they align with forces individuals to live in violence.

#### Health care inflation devastates the economy.

Sood et Al 7, Neeraj, Arkadipta Ghosh, and J. Escarse. "The effect of health care cost growth on the US economy." Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services (September). Available at (http://aspe. hhs. gov/health/reports/08/healthcarecost/report. html (HHS) (2007). (PhD, is professor and vice dean for research at the USC Price School of Public Policy and a founding member the USC Schaeffer Center)//Elmer

2. CONCEPTUAL OVERVEIW OF POTENTIAL MECHNISMS THROUGH WHICH HEALTH CARE INFLATION COULD AFFECT THE US ECONOMY Not surprisingly, the dramatic increases in health care spending and the share of GDP devoted to health care have raised concerns about the **negative impact of health care cost inflation on the U.S. economy**. In an era of global economic markets, these concerns are reinforced by the status of the U.S. as a spending outlier among competing nations. The major concern is that **rapid increases in health care spending** **can affect** **major economic indicators such** per capita **GDP, employment and inflation**. The effects are likely to occur **across all sectors** of the economy – governments, businesses and households – as all these interrelated sectors play an important role in the provision, financing and consumption of health care in the US. For example, Federal, state and local governments collect taxes from businesses and households to finance public health insurance programs and to directly provide health care to households. Businesses provide employment to US households and also provide health insurance to their employees. Households are the final consumers of health care and also bear some incidence of health care costs. In this report we separately identify the effects of health care costs on the aggregate economy and on each one of these interrelated sectors. However, it is important to note that the **effects** of health care costs **on one sector** are **likely to affect** outcomes in **other sectors**. For example, **faced with rising health care costs** **governments** might **attempt to reduce health spending by reducing eligibility for public health insurance**, consequently **increasing** **uninsurance rates** among households. The increase in health care costs might also prompt governments **to raise taxes**, increase borrowing or **reduce investments in** other **critical sectors such as education and infrastructure,** **suppressing economic growth** and affecting both businesses and households. Similarly, **US companies** faced with rapidly growing health care costs **might reduce employment** and investments in the US economy. Rising health care costs could also **fuel inflation** in the U.S. and make U.S. goods and services less competitive in international markets over time, because increasing health care costs might eventually be reflected in higher product prices. Since most other nations do not have employer-sponsored health insurance, companies in thosenations may be better able to keep prices low.2 Finally, high health care costs could reduce access to health care, bankrupt consumers and deplete retirement savings.

#### Economic decline results in multilateral breakdown that causes state collapse, conflict, climate change, and Arctic and Space War.

McLennan 21 – Strategic Partners Marsh McLennan SK Group Zurich Insurance Group, Academic Advisers National University of Singapore Oxford Martin School, University of Oxford Wharton Risk Management and Decision Processes Center, University of Pennsylvania, “The Global Risks Report 2021 16th Edition” “http://www3.weforum.org/docs/WEF\_The\_Global\_Risks\_Report\_2021.pdf //Re-cut by Elmer

Forced to choose sides, governments may face **economic** or diplomatic **consequences**, as proxy disputes play out in control over economic or geographic resources. The deepening of geopolitical fault lines and the lack of viable middle power alternatives make it harder for countries to cultivate connective tissue with a diverse set of partner countries based on mutual values and maximizing efficiencies. Instead, networks will become thick in some directions and non-existent in others. The COVID-19 crisis has amplified this dynamic, as digital interactions represent a “huge loss in efficiency for diplomacy” compared with face-to-face discussions.23 With some **alliances weakening**, diplomatic relationships will become more unstable at points where superpower tectonic plates meet or withdraw. At the same time, without superpower referees or middle power enforcement, global **norms** may **no longer govern** state **behaviour**. Some governments will thus see the solidification of rival blocs as an opportunity to engage in regional posturing, which will have destabilizing effects.24 Across societies, domestic discord and **economic crises will** **increase** the risk of **autocracy**, **with corresponding** **censorship, surveillance**, restriction of movement and abrogation of rights.25 Economic crises will also amplify the **challenges for middle power**s as they navigate geopolitical competition. **ASEAN countries, for example, had offered a potential new manufacturing base as the United States and China decouple, but the pandemic has left these countries strapped for cash to invest in the necessary infrastructure and productive capacity.26** Economic fallout is pushing many countries to debt distress (see Chapter 1, Global Risks 2021). While G20 countries are supporting debt restructure for poorer nations,27 larger economies too may be at **risk of default** in the longer term;28 this would **leave them further stranded**—**and unable to exercise leadership—on the global stage**. Multilateral meltdown **Middle power weaknesses** will be **reinforced** in weakened institutions, which may translate to **more uncertainty and lagging progress on shared global challenges such as climate change**, **health, poverty reduction and technology governance**. In the absence of strong regulating institutions, **the Arctic and space represent new realms for** potential **conflict** as the superpowers and middle powers alike compete to extract resources and secure strategic advantage.29 If the global superpowers continue to accumulate economic, military and technological power in a zero-sum playing field, some middle powers could increasingly fall behind. Without cooperation nor access to important innovations, middle powers will struggle to define solutions to the world’s problems. In the long term, GRPS **respondents forecasted “w**eapons of **m**ass **d**estruction” **and “state collapse**” as the two top critical threats: in the absence of strong institutions or clear rules, clashes— such as those in **Nagorno-Karabakh or the Galwan Valley**—**may more frequently flare into** full-fledged **interstate conflicts**,30 which is particularly worrisome where unresolved tensions among nuclear powers are concerned. These conflicts may lead to state collapse, with weakened middle powers less willing or less able to step in to find a peaceful solution.

#### HIV and COVID disprove and thump disads

Garrett 21 [Laurie Garrett, a former senior fellow for global health at the Council on Foreign Relations and a Pulitzer Prize winning science writer, 5-7-2021, "Stopping Drug Patents Has Stopped Pandemics Before," archive.is, https://archive.is/DKUyZ#selection-1215.4-1215.124, accessed 9-14-2021] BCortez

As millions of HIV positive people living in wealthy countries switched overnight from planning their funerals to building up retirement accounts, the miracle of combination antiviral therapy was denied to millions more living with AIDS in sub-Saharan Africa and other poorer regions. A battle unfolded, pitting a reluctant—even obstinate—pharmaceutical industry against AIDS activists, physicians, and political leaders from developing countries. In 2002, former U.S. President [Bill Clinton](https://archive.is/o/DKUyZ/https:/www.who.int/workforcealliance/members_partners/member_list/clinton/en/) intervened, using his bully pulpit in consultation with a team of academic experts convened by his philanthropic foundation to contrive a tech-transfer scheme that had Western pharmaceutical companies provide their patented drug formulas to Indian generic manufacturing companies, ultimately bringing down annual [treatment costs](https://archive.is/o/DKUyZ/https:/frontlineaids.org/how-patents-affect-access-to-hiv-treatment/) from nearly $10,000 to less than $100.∂ Far from bringing chaos to the pharmaceutical industry and stifling innovation, the Clinton Foundation’s maneuver around the strict enforcement of intellectual property laws [ushered](https://archive.is/o/DKUyZ/https:/www.uspharmacist.com/article/newly-approved-hiv-medications) in a dramatic era of HIV [drug invention](https://archive.is/o/DKUyZ/https:/www.aidsmap.com/about-hiv/a-z-antiretroviral-medications) that improved the antiviral power of treatment, lowered drug side effects, developed new drug forms that are now taken to prevent infection, increased options for pediatric care, and greatly improved the methods for which HIV positive individuals could take their life-sparing treatments. Despite the loss of guaranteed patent protection and pressure to transfer technology to, primarily, Indian pharmaceutical companies, wealthy nations’ drug [companies have profited](https://archive.is/o/DKUyZ/https:/www.statista.com/statistics/273434/revenue-of-the-worlds-most-important-aids-drugs/%23:~:text=Globally,%20the%20top%20drug%20for,billion%20U.S.%20dollars%20in%20revenue.) and [continue to innovate](https://archive.is/o/DKUyZ/https:/www.aidsmap.com/sites/default/files/2019-07/ARV_drugchart_2019_final_web.pdf) on the [HIV/AIDS](https://archive.is/o/DKUyZ/https:/www.fda.gov/news-events/press-announcements/fda-approves-new-hiv-treatment-patients-limited-treatment-options%23:~:text=Today,%20the%20U.S.%20Food%20and,resistance,%20intolerance%20or%20safety%20considerations.) front.∂ Of the multiple COVID-19 vaccines currently in use, the most promising—the mRNA and adenovirus vector products—all arose from government-funded research, mostly based in academic research centers. AstraZeneca’s vaccine, for example, grew out of the United Kingdom’s government-back research and development at Oxford University. The Moderna and Pfizer mRNA vaccines grew out of years of [National Institutes of Health-funded research](https://archive.is/o/DKUyZ/https:/twitter.com/MMKavanagh/status/1390282745356726275/photo/1) in the United States and with predecessor [Ebola vaccines](https://archive.is/o/DKUyZ/https:/www.niaid.nih.gov/diseases-conditions/ebola-vaccines) in the Democratic Republic of the Congo, Guinea, Sierra Leone, and Liberia. China’s vaccine built on years of [military immunization work](https://archive.is/o/DKUyZ/https:/www.nature.com/articles/d41586-020-02523-x).∂ And thanks to Operation Warp Speed, many companies involved in the vaccine chain of production have [benefited](https://archive.is/o/DKUyZ/https:/www.wionews.com/world/vaccine-profits-why-big-pharma-is-defending-patents-amid-pandemic-382817) with a total of $18 billion of U.S. government subsidies. The speed and scale of COVID-19 vaccine production in the United States is largely thanks to the country’s taxpayers. This week, [Pfizer reported](https://archive.is/o/DKUyZ/https:/www.nytimes.com/2021/05/04/business/pfizer-covid-vaccine-profits.html%23:~:text=The%20company%20said%20its%20vaccine,three%20months%20of%20this%20year.&text=The%20vaccine%20brought%20in%20$3.5,its%20total%20revenue,%20Pfizer%20reported.) earning $3.5 billion in profits during the first quarter of this year from its COVID-19 vaccine. [Moderna earned](https://archive.is/o/DKUyZ/https:/www.wsj.com/articles/moderna-turns-first-ever-profit-boosted-by-its-covid-19-vaccine-11620302289) the first profits the fledgling company has ever seen—$1.73 billion—and projects nearly $20 billion in earnings this year. Despite setbacks, [both the AstraZeneca and Johnson & Johnson](https://archive.is/o/DKUyZ/https:/www.theguardian.com/business/2021/mar/06/from-pfizer-to-moderna-whos-making-billions-from-covid-vaccines) adenovirus vector vaccines are making handy profits, projected to each garner multiple billions of dollars this year. Even Sinopharm from China and Gamaleya from Russia expect to reap ample profits in 2021, both in cash and diplomacy, as they sell vaccines directly to key governments. The [Novavax company](https://archive.is/o/DKUyZ/https:/seekingalpha.com/article/4410569-novavax-inc-nvax-ceo-stan-erck-on-q4-2020-results-earnings-call-transcript), which makes a not-yet-approved protein vaccine, expects massive earnings in late 2021.∂ Despite the threat of patent-voiding, all of these companies—as well as a long list of would-be vaccine makers further back in the research and development pipeline—have continued to innovate, trying to find formulations that can battle variant strains of the virus; be stored at room temperature; and get administered via skin patches, orally, or in a nasal mist. The creativity at these companies continues—and there’s no reason to think it will stop anytime soon.∂ It remains to be seen how many countries with big pharmaceutical industries will follow the Biden administration’s lead in liberalizing patent protections for COVID-19-related vaccines and drugs. The WTO operates by consensus from member states, so the United States can’t unilaterally alter the global landscape. But [Ngozi Okonjo-Iweala](https://archive.is/o/DKUyZ/https:/www.wto.org/english/news_e/news21_e/dgno_15feb21_e.htm), the new WTO director-general, is already raising the heat. A former Nigerian minister of finance, ex-World Bank official, and the first African and woman to hold the coveted World Trade Organization position, Okonjo-Iweala made it clear from her first day in office that a TRIPS-waiver for COVID-19-related products was her [top priority](https://archive.is/o/DKUyZ/https:/www.un.org/africarenewal/magazine/march-2021/what-africa-expects-new-wto-director-general).

# Framework

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

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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.

#### **The standard is maximizing expected well being.**

Prefer:

#### **1]outweighs on actor specificity since governments make policies as a whole that benefit and help some people and side constraints freeze action – actor spec outweighs and turns since it’s better than no action, states don’t have wills and intentions since they are not indivuals actors, different agents have different obligations**

#### **2] no act omission distinction -- governments control everything that happens in the public sphere since they yes/no bills – act omission distinction would make the yemen war moral**

#### 3] use epistemic modesty – multiply probability of the fwk times the magnitude of the impacts A) clash – encourages both substantive and phil debates so that we talk about all the offense B) leads to the net most morality and proves that only beating fwk is not enough to win the debate

#### **4] Extinction outweighs.**

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

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

# 1AR

# 2AR