### 1rst adv is Econ

### Vaccines will not cover LMICS until at least 2023—fortunately there is massive room for supply increase

Nancy S. **Jecker &** Caesar A. **Atuire 21**. \*Department of Bioethics & Humanities, University of Washington School of Medicine, \*\*Department of Philosophy, University of Johannesburg, Auckland Park, Gauteng, South Africa, “What’s yours is ours: waiving intellectual property protections for COVID-19 vaccines,” Journal of Medical Ethics, July 6, 2021, <https://jme.bmj.com/content/medethics/early/2021/07/06/medethics-2021-107555.full.pdf>., RJP, DebateDrills.

Since consequentialist justifications treat the value of IP as purely instrumental, they are also vulnerable to counterarguments showing that a sought-after goal is not the sole or most important end. During the COVID-19 pandemic, we submit that the vaccinating the world is an overriding goal. With existing IP protections intact, the world has **fallen well short** of this goal. Current forecasts show that at the current pace, there will **not be enough vaccines to cover the world’s population** until 2023 or 2024.15 IP protections further frustrate the goal of universal access to vaccines by limiting who can manufacturer them. The WHO reports that 80% of global sales for COVID-19 vaccines come from five large multinational corporations.16 Increasing the number of manufacturers globally would not only **increase supply,** but reduce prices, making vaccines more affordable to LMICS **L[ow and] M[iddle] I[ncome] C[ountrie]s. I**t would stabilise supply, minimising disruptions of the kind that occurred when India halted vaccine exports amidst a surge of COVID-19 cases.

It might be objected that waiving IP protections will not increase supply, because it takes years to **establish manufacturing capacity**. However, since the pandemic began, we have learnt it takes less time. Repurposing facilities and vetting them for safety and quality can often happen in 6 or 7months, about half the time previously thought.17 Since COVID-19 will not be the last pandemic humanity faces, expanding manufacturing capacity is also necessary preparation for **future pandemics**. Nkengasong, Director of the African Centres for Disease Control and Prevention, put the point bluntly, ‘Can a continent of 1.2billion people—projected to be 2.4billion in 30 years, where one in four people in the world will be African—continue to import 99% of its vaccine?’18

#### Unequal vaccine distribution has massive economic costs even with conservative estimates that don’t account for the Delta variant

**Çakmakli 21**-- Çakmakli, Cem [Assistant Professor at Koç University. PhD: Pennsylvania State University] et al. The economic case for global vaccinations: An epidemiological model with international production networks. No. w28395. National Bureau of Economic Research, 2021. (AG DebateDrills)

**To estimate the costs of inequitable vaccine distribution, we develop a global SIR-multi-sectormacro framework and calibrate it to 65 countries-35 sectors.** We incorporate sectoral heterogeneity in infections together with inter-industry and international trade and production linkages. **Once we account for this economic interdependence of the economies, we reveal the substantial costs, up to 3 percent of advanced countries pre-pandemic GDPs, that will be borne by the vaccinated countries through their trade relationships with unvaccinated countries.**36 Our framework captures the short run. **We find that AEs may bear somewhere from 13 percent to 49 percent of the global losses arising from an inequitable distribution of vaccines in 2021. Globalization might have amplified the effects of the pandemic but it is also imperative for an equitable distribution of the vaccines because this is the only way for open economies with international linkages to have a robust recovery.** There are substantial uncertainties ahead of us regarding the course of vaccine distribution. Our estimates are based on the available information about the pandemic. For example, we did not incorporate the recent developments on the variants into our analysis. **To the extent that these variants threaten the efficacy of the current vaccines, there is even more urgency to make the existing vaccines globally available as soon as possible. Mutations that risk a prolonged pandemic would not only have further health costs but also escalate the economic costs that we estimated in our analysis.**

#### Economic loss and slow supply recovery causes inflation deanchoring and econ collapse in advanced economies as well as extreme poverty in EMDEs

**World Bank 6-21** – World Bank Prospects Group; June 2021 Global Economic Prospects; <https://openknowledge.worldbank.org/bitstream/handle/10986/35647/9781464816659.pdf> (AG DebateDrills)

**Since May 2020, however, inflation has gradually picked up.** **By April 2021, inflation had risen above pre-pandemic levels, in both advanced economies and EMDEs**. The inflation pickup was broad-based and present in about four-fifths of countries, although the change in inflation varied widely, especially in EMDEs. The 2020 global recession featured the most muted inflation decline and fastest subsequent inflation upturn of the five global recession episodes of the past 50 years (box 4.1). While this behavior partly reflects lower levels of inflation at the beginning of 2020, purchasing managers report growing pressures on input as well as output prices in 2021 (figure 4.1). **Looking ahead, as the global economy gradually reopens, monetary and fiscal policies continue to be accommodative to support the global recovery, and pent-up demand may be about to be unleashed in advanced economies.1 For major advanced economies, some have raised concerns that this confluence of factors may generate significant inflationary pressures** (Blanchard and Pisani-Ferry 2020; Goodhart and Pradhan 2020; Landau 2021). Others, in contrast, see little reason for concern, at least for many advanced economies, because of the temporary nature of price pressures over the short-term as well as wellanchored inflation expectations and structural factors still depressing inflation (Ball et al. 2021; Gopinath 2021). If growing inflationary pressures cause financial market participants to become concerned about persistently higher inflation in advanced economies, they may reassess prospects for continued accommodative monetary policies by major central banks. **This could trigger a significant rise in risk premia and borrowing costs. EMDEs are particularly vulnerable to such financial market disruptions because of their record high debt and a lagging economic recovery from the pandemic (chapter 1). In the event of financial market stress, sharp exchange rate depreciations and capital outflows may force them to abruptly tighten policies in a manner that could throttle their recoveries. Even in the absence of dislocating financial market stress, EMDES E[merging] M[arket] D[eveloping] E[conomie]s may face rising inflation as global price pressures feed into domestic inflation through input prices and exchange rate movements**. A temporary increase in inflation may not warrant a monetary policy response. Again, if rapidly rising price pressures risk de-anchoring inflation expectations, EMDE central banks may be forced to tighten monetary policy before the recovery is fully entrenched. **Persistently higher inflation would erode discretionary incomes of the poorest households and may tip some back into poverty** (Ha, Kose, and Ohnsorge 2019). **This is a particularly serious risk for low-income countries** (LICs; box 4.2). **Since food accounts for a substantial share of consumption in these countries, recent increase in food prices have led to higher inflation and compounded the challenges confronting the poor during the pandemic.**

#### Economic Collapse goes Nuclear.

**Tønnesson 15**, Stein. "Deterrence, interdependence and Sino–US peace." International Area Studies Review 18.3 (2015): 297-311. (the Department of Peace and Conflict, Uppsala University, Sweden, and Peace research Institute Oslo (PRIO), Norway)

Several recent works on China and Sino–US relations have made substantial contributions to the current understanding of how and under what circumstances a combination of nuclear deterrence and economic interdependence may reduce the risk of war between major powers. At least four conclusions can be drawn from the review above: first, those who say that interdependence may both inhibit and drive conflict are right. Interdependence raises the cost of conflict for all sides but asymmetrical or unbalanced dependencies and negative trade expectations may generate tensions leading to trade wars among inter-dependent states that in turn increase the risk of military conflict (Copeland, 2015: 1, 14, 437; Roach, 2014). The risk may increase if one of the interdependent countries is governed by an inward-looking socio-economic coalition (Solingen, 2015); second, the risk of war between China and the US should not just be analysed bilaterally but include their allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia (China, Japan and South Korea) are all deeply integrated economically through production networks within a global system of trade and finance (Ravenhill, 2014; Yoshimatsu, 2014: 576); and fourth, **decisions for war and peace are taken by very few people, who act on the basis of their future expectations**. International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. If leaders on either side of the Atlantic begin to seriously fear or anticipate their own nation’s decline then they may blame this on external dependence, appeal to anti-foreign sentiments, contemplate the use of force to gain respect or credibility, adopt protectionist policies, and ultimately refuse to be deterred by either nuclear arms or prospects of socioeconomic calamities. **Such a dangerous shift could happen abruptly**, i.e. under the instigation of actions by a third party – or against a third party. Yet as long as there is both nuclear deterrence and interdependence, the tensions in East Asia are unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot count on support from either China or the US if they make provocative moves. The **greatest risk is not that a territorial dispute leads to war under present circumstances but that changes in the world economy** alter those circumstances in ways that render inter-state peace more precarious. If China and the US fail to rebalance their financial and trading relations (Roach, 2014) then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. This could have unforeseen consequences in the field of security, with nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so. Deterrence could lose its credibility: one of the two great powers might gamble that the other yield in a cyber-war or conventional limited war, or third party countries might engage in conflict with each other, with a view to obliging Washington or Beijing to intervene.

### 2nd adv- is Disease

### The plan sets a precedent to seamlessly shift to a direct support model during pandemics--that solves future pandemics but avoids the innovation DA.

Brink **Lindsey 21**. Vice President, Niskanen Center; Writes for Brookings, “Why Intellectual Property and Pandemics Don’t Mix,” Brookings, June 3, 2021, <https://www.brookings.edu/blog/up-front/2021/06/03/why-intellectual-property-and-pandemics-dont-mix/>, RJP, **DebateDrills**.

**PUBLIC HEALTH EMERGENCIES AND DIRECT GOVERNMENT SUPPORT**

For pandemics and other public health emergencies, patents’ mix of costs and benefits is **misaligned** with what is needed for an effective policy response. The basic patent bargain, even when well struck, is to pay for more innovation down the road with **slower diffusion of innovation today**. In the **context of a pandemic**, that bargain is a bad one and should be rejected entirely. Here the imperative is to **accelerate** the diffusion of vaccines and other treatments, not slow it down. Giving drug companies the power to hold things up by blocking competitors and raising prices pushes in the completely wrong direction.

What approach to encouraging innovation should we take instead? How do we incentivize drug makers to undertake the hefty R&D costs to develop new vaccines without giving them exclusive rights over their production and sale? The most effective approach during a public health crisis is **direct government support**: public funding of R&D, advance purchase commitments by the government to buy large numbers of doses at set prices, and other, related payouts. And when we pay drug makers, we should not hesitate to pay generously, even extravagantly: we want to offer drug companies big profits so that they prioritize this work above everything else, and so that they are ready and eager to come to the rescue again the next time there’s a crisis.It was direct support via **Operation Warp Speed** that made possible the astonishingly rapid development of COVID-19 vaccines and then facilitated a relatively rapid rollout of vaccine distribution (relative, that is, to most of the rest of the world). And it’s worth noting that a major reason for the faster rollout here and in the United Kingdom compared to the European Union was the latter’s [misguided penny-pinching](https://www.nytimes.com/2021/05/17/opinion/europe-vaccines-commission.html?smid=tw-share). The EU bargained hard with firms to keep vaccine prices low, and as a result their citizens ended up in the back of the queue as various supply line kinks were being ironed out. This is particularly ironic since the Pfizer-BioNTech vaccine was developed in Germany. As this fact underscores, the chief advantage of direct support isn’t to “get tough” with drug firms and keep a lid on their profits. Instead, it is to accelerate the end of the public health emergency by making sure drug makers profit handsomely from doing the right thing.Patent law and direct support should be seen **not as either-or alternatives but as complements** that apply different incentives to different circumstances and time horizons. Patent law provides a decentralized system for encouraging innovation. The government doesn’t presume to tell the industry which new drugs are needed; it simply incentivizes the development of whatever new drugs that pharmaceutical firms can come up with by offering them a temporary monopoly. It is important to note that patent law’s incentives offer no commercial guarantees. Yes, you can block other competitors for a number of years, but that still doesn’t ensure enough consumer demand for the new product to make it profitable. **DIRECT SUPPORT MAKES PATENTS REDUNDANT** The situation is different in a pandemic. Here the government knows exactly what it wants to incentivize: the creation of vaccines to prevent the spread of a specific virus and other drugs to treat that virus. Under these circumstances, the decentralized approach isn’t good enough. There is no time to sit back and let drug makers **take the initiative** on their own timeline. Instead, the government needs to be more involved to incentivize specific innovations now. As recompense for letting it call the shots (pardon the pun), the government sweetens the deal for drug companies by insulating them from commercial risk. If pharmaceutical firms develop effective vaccines and therapies, the government will buy large, predetermined quantities at prices set high enough to guarantee a healthy return. For the pharmaceutical industry, it is useful to conceive of patent law as the default regime for innovation promotion. It improves pharmaceutical companies’ incentives to develop new drugs while leaving them free to decide which new drugs to pursue – and also leaving them to bear all commercial risk. In a pandemic or other emergency, however, it is appropriate to **shift to the direct support regime**, in which the government focuses efforts on one disease. In this regime, it is important to note, the government provides qualitatively superior incentives to those offered under patent law. Not only does it offer public funding to cover the up-front costs of drug development, but it also provides advance purchase commitments that guarantee a healthy return. It should therefore be clear that the pharmaceutical industry has **no legitimate basis for objecting to a TRIPS waiver**. Since, because of the public health crisis, drug makers now qualify for the superior benefits of direct government support, they no longer need the default benefits of patent support. Arguments that a TRIPS waiver would deprive drug makers of the incentives they need to keep developing new drugs, when they are presently receiving the most favorable incentives available, can be **dismissed as the worst sort of special pleading.** That said, it is a serious mistake to try to cast the current crisis as a morality play in which drug makers wear the black hats and the choice at hand is between private profits and public health. We would have no chance of beating this virus without the formidable organizational capabilities of the pharmaceutical industry, and providing the appropriate incentives is essential to ensure that the industry plays its necessary and vital role. It is misguided to lament that private companies are profiting in the current crisis: those profits are a drop in the bucket compared to the staggering cost of this pandemic in lives and economic damage. What matters isn’t the existence or size of the profits, but how they are earned. We have good reason to want drug makers to profit from vaccinating the world: the comparative price is minuscule, and the incentive effects are a vital safeguard of public health in the event of future crises. What we want to avoid at all costs is putting drug makers in the position where drug companies can profit from standing in the way of rapid global vaccination. That is why intellectual property rights need to be taken out of the equation. Vaccinating the world in any kind of reasonable time frame will require large-scale technology transfer to drug firms in other countries and rapid expansion of their production capacity. And looking beyond the current pandemic to the longer term, we need [ample, redundant global vaccine production capacity](https://www.vox.com/future-perfect/22397914/vaccine-mrna-adenovirus-manufacturing-process-investment) that is widely distributed around the planet. To achieve these goals as rapidly as possible will require the active cooperation of the U.S. pharmaceutical industry, which is why the direct support model now needs to be extended. What is needed now is an Operation Warp Speed for the world, in which we make it worth current vaccine producers’ while to share their know-how broadly and ramp up global capacity. Here again, we must recognize that the choice isn’t between people on the one hand and profits on the other. Rather, the key to good pandemic response policy is ensuring that **incentives are structured** so that drug company profit-seeking and global public health are well aligned. That means opting out of the default, decentralized patent bargain in favor of generous but well-focused direct government support.

### Solvency

#### Plan: Member nations of the WTO ought to grant a TRIPS waiver for novel pandemics

-the TRIPS waiver will be triggered by conditions modified from the Association for Professionals in Infection Control and Epidemiology:

Association for Professionals in Infection Control and Epidemiology **(APIC 19)**. Center for Disease Control sub-branch.<https://apic.org/monthly_alerts/outbreaks-epidemics-and-pandemics-what-you-need-to-know/> January 2nd,2019

* The geographical area is world wide.
* It rapidly infects people at an elevated stage above epidemic
* is often caused by a new strain that has not circulated among people for a long time. Humans usually have little to no immunity against it. The illness spreads quickly from person-to-person worldwide.
* causes an elevated rate of death compared to a well known counterpart (IE. swine flu vs common flu)
* often creates social disruption, economic loss, and general hardship.

#### India and South Africa have signaled ability to increase vaccine production after a TRIPS waiver—this is also our solvency advocate

Nancy S. **Jecker &** Caesar A. **Atuire 21**. \*Department of Bioethics & Humanities, University of Washington School of Medicine, \*\*Department of Philosophy, University of Johannesburg, Auckland Park, Gauteng, South Africa, “What’s yours is ours: waiving intellectual property protections for COVID-19 vaccines,” Journal of Medical Ethics, July 6, 2021, <https://jme.bmj.com/content/medethics/early/2021/07/06/medethics-2021-107555.full.pdf>., AG, **DebateDrills.**

This view has come under increasing fire. Two competing positions have emerged. First, **India and South Africa petitioned the WTO for a temporary waiver of IP rights for medical products pertaining to preventing, containing or treating COVID19.2 The wavier would apply to all WTO members and lift restrictions in four TRIPS sections: copyright and related rights, industrial designs, patents and protection of undisclosed information. It would be annually reviewed and last for a set length, determined by the WTO Council. Proponents of the proposal argue that IP protections have ‘hindered urgent scale-up of vaccine production’** and that ‘many countries—especially LMICs countries—may face institutional and legal difficulties when using TRIPS flexibilities’.12 To break the divide, WTO Director General, Okonjo-Iweala, proposed ‘a third way’ in which ‘we… license manufacturing to countries so that we can have adequate supplies while still making sure that IP issues are taken care of.’13 **This approach permits companies to retain ownership while licensing other companies to manufacture their vaccines**.

#### The plan is also a prerequisite to starting the WHO technology transfer hub

**WHO 4/21—**WHO, 4-21-2021, “Establishment of a COVID-19 mRNA vaccine technology transfer hub to scale up global manufacturing,” <https://www.who.int/news-room/articles-detail/establishment-of-a-covid-19-mrna-vaccine-technology-transfer-hub-to-scale-up-global-manufacturing>. (AG DebateDrills)

WHO and its partners are seeking to expand the capacity of low- and middle-income countries (LMICs) to produce COVID-19 vaccines and scale up manufacturing to increase global access to these critical tools to bring the pandemic under control.

**WHO will facilitate the establishment of one (or more, as appropriate) technology transfer hub(s) that will use a hub and spoke model (REF) to transfer a comprehensive technology package and provide appropriate training to interested manufacturers in LMICs. This initiative will initially prioritize the mRNA-vaccine technology2 but could expand to other technologies in the future.**

The intention is for these hubs to enable the establishment of production process at an industrial or semi-industrial level permitting training and provision of all necessary standard operating procedures for production and quality control. **It is essential that the technology used is either free of intellectual property constraints in LMICs, or that such rights are made available to the technology hub and the future recipients of the technology through non-exclusive licenses to produce, export and distribute the COVID-19 vaccine in LMICs, including through the COVAX facility**. Preference will be given to applicants who have already generated clinical data in humans, as such clinical data will contribute to accelerated approval of the vaccines in LMICs.

It is anticipated that WHO will work with funders and donors to mobilize financial support to establish the hubs and, as they are being established, to support the transfer of technology to selected manufacturers in LMICs, taking into consideration the need to establish permanent vaccine production capacity in regions where this is currently mostly absent. **This broader objective will ensure that all WHO regions will be able to produce vaccines as essential preparedness measures against future infectious threats**

#### There are many countries including Canada, Bangladesh, Denmark, and African nations that have capacity to produce millions of doses

**Meldrum and Cheng 21**-- ANDREW MELDRUM and MARIA CHENG, AP News, “Vaccine technology transfer center to open in South Africa,” 6/21/2021, <https://apnews.com/article/united-nations-south-africa-africa-technology-coronavirus-vaccine-3cbdee395502802b55db2b5c81e6becd>. (AG, DebateDrills)

**Poor countries in Africa and elsewhere are facing dire shortages of COVID-19 jabs despite some countries having the ability to produce vaccines**, lamented Lara Dovifat, a campaign and advocacy adviser for Doctors Without Borders. “The faster companies share the know-how, the faster we can put an end to this pandemic,” she said in a statement. **Numerous factories in Canada, Bangladesh, Denmark and elsewhere have previously called for companies to immediately share their technology, saying their idle production lines could be churning out millions of doses if they weren’t hampered by IP intellectual property and other restrictions**. More than 1 billion coronavirus vaccines have been administered globally, but fewer than 1% have been in poor countries. South Africa accounts for nearly 40% of Africa’s total recorded COVID-19 infections and is currently suffering a rapid surge, but vaccine rollout has been slow, marked by delayed deliveries among other factors. **South Africa currently does not manufacture any COVID-19 vaccines from scratch, but its Aspen Pharmacare assembles the JJ Johnson & Johnson shot by blending large batches of the ingredients sent by J&J and then putting the product in vials and packaging them, a process known as fill and finish.** Earlier this month the company had to discard 2 million doses because they had ingredients produced in the U.S. in a factory under suspect conditions.

## Framing

#### Pleasure and pain are intrinsically valueable and disvalueable – everything else regresses. Evolutionary knowledge is reliable – broad consensus and robust neuroscience prove.

**Blum et al. 18**

Kenneth Blum, 1Department of Psychiatry, Boonshoft School of Medicine, Dayton VA Medical Center, Wright State University, Dayton, OH, USA 2Department of Psychiatry, McKnight Brain Institute, University of Florida College of Medicine, Gainesville, FL, USA 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA 5Department of Precision Medicine, Geneus Health LLC, San Antonio, TX, USA 6Department of Addiction Research & Therapy, Nupathways Inc., Innsbrook, MO, USA 7Department of Clinical Neurology, Path Foundation, New York, NY, USA 8Division of Neuroscience-Based Addiction Therapy, The Shores Treatment & Recovery Center, Port Saint Lucie, FL, USA 9Institute of Psychology, Eötvös Loránd University, Budapest, Hungary 10Division of Addiction Research, Dominion Diagnostics, LLC. North Kingston, RI, USA 11Victory Nutrition International, Lederach, PA., USA 12National Human Genome Center at Howard University, Washington, DC., USA, Marjorie Gondré-Lewis, 12National Human Genome Center at Howard University, Washington, DC., USA 13Departments of Anatomy and Psychiatry, Howard University College of Medicine, Washington, DC US, Bruce Steinberg, 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA, Igor Elman, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, David Baron, 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA, Edward J Modestino, 14Department of Psychology, Curry College, Milton, MA, USA, Rajendra D Badgaiyan, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, Mark S Gold 16Department of Psychiatry, Washington University, St. Louis, MO, USA, “Our evolved unique pleasure circuit makes humans different from apes: Reconsideration of data derived from animal studies”, U.S. Department of Veterans Affairs, 28 February 2018, accessed: 19 August 2020, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6446569/>, R.S.

**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.

#### Thus, the standard is maximizing expected well-being or act hedonistic util. Prefer additionally –

#### 1] Outweighs – A] Predictability – most authors assume util when discussing the cost/benefit tradeoffs of voting B] topic ed – other frameworks don’t engage with key questions of implemented policy impacts – that’s key, b/c we only have 2 months for this topic. C] TJFs first because they assume the framework being good for debate

#### 2] 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 c) future generations

#### 3] 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.

### Underview

Underview

Advocacy

[1] 1AR theory is legit – anything else means infinite abuse – drop the debater, competing interps, no rvis and the highest layer of the round – 1AR is too short to make up for the time trade-off – no RVIs or 2NR theory and paradigm issues– 6 min 2NR means they can brute force me every time.

[2] Assume I-meets to spec shells since they are infinitely regressive-- the neg can always say I didn't spec enough no matter how much I spec’d

[3] PICs affirm – they don’t disprove the resolution as a general principle. For example, I can say that dogs have 4 legs, and a dog with 3 legs wouldn’t disprove that statement.

[4] Give me new 2AR weighing and arguments - I only know what arguments I have to weigh against in the 2NR, but they know in the 1AR.

[5] No new 2NR theory arguments – or else they can flood the 2ar with theory and win because the 2ar is too short