### Plan

#### Text – Member nations of the Outer Space Treaty ought to rule that appropriation of outer space by private actors is unjust by explicitly applying Article II of the Outer Space Treaty to private actors.

#### To Clarify – this is a whole resolution Affirmative that’s defends implementation through the Outer Space Treaty.

### 1AC: OST

#### Advantage 1 is the OST:

#### Vagueness in the OST that reflect democratized advances in Space cause ambiguity concerns – risks rendering the OST extinct.

CFR 17 10-10-2017 "The Outer Space Treaty’s Midlife Funk" <https://www.cfr.org/blog/outer-space-treatys-midlife-funk> (Council of Foreign Relations)//Elmer

Today marks the fiftieth anniversary of the Outer Space Treaty’s entry into force. The UN agreement, which took effect on October 10th, 1967, created a binding legal regime for the cosmos (Earth notwithstanding). Declaring outer space to be the “province of all mankind” and dictating that it be used for peaceful purposes, the treaty eased U.S.-Soviet tensions, helping to lay the groundwork for the détente of the following decade. The agreement was, in many respects, a triumph for multilateralism. More on: Space Global Commons Global Governance Technology and Innovation Half a century later, however, the Outer Space Treaty has entered something of a funk. Despite the universal aspirations of the UN Committee on the Peaceful Uses of Outer Space, which molded the document into its completed form, many of the principles enshrined within the text are less suited to the present than they were to their native Cold War milieu. While the anachronism has not reached crisis levels, current and foreseeable developments do present challenges for the treaty, heightening the potential for disputes. At the crux of the matter is the ongoing democratization of space. During the 1950s and ‘60s, when the fundamental principles of international space law took shape, only large national governments could afford the enormous outlays required for creating and maintaining a successful space program. In more recent decades, technological advances and new business models have broadened the range of spacefaring actors. Thanks to innovations such as reusable rockets, micro- and nanosatellites, and inflatable space station modules, costs are decreasing and private companies are crowding into the sector. This flurry of activity, known as New Space, promises nothing less than a complete transformation of the way that humans interact with space. Asteroid mining, for example, could eliminate the need to launch many essential materials from Earth, lowering logistical hurdles and enabling largescale in-space fabrication. Companies like Planetary Resources and Deep Space Industries, by extracting and selling useful resources in situ, could help to jumpstart a sustainable space economy. They might also profit from selling valuable commodities back on terra firma. As a recent (bullish) Goldman Sachs report noted, a single football-field-sized asteroid could contain $25 to $50 billion worth of platinum—enough to upend the terrestrial market. With astronomical sums at stake and the commercial sector kicking into high gear, legal questions are becoming a major concern. Many of these questions focus on Article II of the Outer Space Treaty, which prohibits national appropriation of space and the celestial bodies. Since another provision (Article VI) requires nongovernmental entities to operate under a national flag, some experts have suggested that asteroid mining, which would require a period of exclusive use, may violate the agreement. Others, however, contend that companies can claim ownership of extracted resources without claiming ownership of the asteroids themselves. They cite the lunar samples returned to Earth during the Apollo program as a precedent. Hoping to promote American space commerce, Congress formalized this more charitable legal interpretation in Title IV of the 2015 U.S. Commercial Space Launch Competitiveness Act. Luxembourg, which announced a €200 million asteroid mining fund last year, followed suit with its own law in August. Controversies like the one surrounding asteroid mining are par for the course when it comes to the Outer Space Treaty. The agreement’s insistence that space be used “for peaceful purposes” has long been the subject of intense debate. During the treaty-making process, Soviet jurists argued that peaceful meant “non-military” and that spy satellites were illegal; Americans, who enjoyed an early lead in orbital reconnaissance, interpreted peaceful to mean “non-aggressive” and came to the opposite conclusion. Decades later, the precise meaning of the phrase remains a matter of contention.

#### Legal Ambiguity collapses OST Credibility – results in a space free-for-all – clarification to prevent appropriation by Private Actors is key to maintain relevance.

Davis 18 Malcolm Davis .16 Jul 2018. Avoiding a free-for-all: the Outer Space Treaty revisited. <https://www.aspistrategist.org.au/avoiding-a-free-for-all-the-outer-space-treaty-revisited/> [Malcolm Davis is a senior analyst at ASPI. Edited image courtesy of the European Space Agency] // CVHS SR

One theme considered at ASPI’s recent annual Building Australia’s Strategy for Space conference was the growing importance of space law as space becomes more contested, congested and competitive. The basis of space law remains the 1967 Outer Space Treaty (OST), but a lot has happened since it was signed. Perhaps it’s time to review and refresh the treaty. Article IV of the OST states that: States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies or station weapons in outer space in any other manner. The moon and other celestial bodies shall be used … exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden … Article IV doesn’t ban the weaponisation of space outright. Nor has there been any other legal agreement that bans such systems, despite ongoing international efforts in recent decades. US adversaries (including China and Russia) are developing a suite of sophisticated counter-space capabilities, including direct ascent and co-orbital ‘hard kill’ and ‘soft kill’ systems (see here and here). The US and its allies must respond seriously to these challenges and protect their critical space-based infrastructure. A ‘space Pearl Harbor’ could quickly remove the traditional information-based war-fighting advantage of Western liberal democracies, leaving the US and its partners deaf, dumb and blind at the outset of a conflict. Part of the solution is to bolster space deterrence, to dissuade the use of counter-space capabilities by adversaries. The US and its allies, including Australia, need to work together to achieve that objective. Strengthening the 1967 OST’s provision on space weapons is also a must, but it will be difficult to get other major space powers such as China and Russia to agree to new legal constraints on capabilities that they’re already developing and testing. It will also be difficult to get agreement on what a space weapon is and what constitutes a counter-space attack. Earth-based soft-kill systems—such as cyberattacks that could create scalable, reversible effects—offer deniability to the aggressor. Article IV bans the militarisation of the moon and other celestial bodies by states, but it has a weakness: it allows ‘use of military personnel for scientific research or for other peaceful purposes’ and includes a vague statement that ‘use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited’. Defining ‘peaceful purpose’ activities isn’t easy either, particularly when states such as China have space programs run by the military. As China looks towards crewed lunar missions by the 2030s, there’s a risk that it may exploit ‘grey zone’ phenomena on the high frontier in support of its national strategic ambitions, which include contesting the US advantage in space. The OST was signed at a time when commercial space actors simply didn’t exist. However, Article VI implies the possibility of such actors: States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by government agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. Yet that doesn’t address activities by commercial space corporations that are acting alone and independently of national guidance—or at least those that declare that they’re doing so. For example, the potential resource wealth of the moon and near-Earth asteroids opens up the prospect for private space corporations to make vast profits from those resources. Article II of the OST says, ‘Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by other means.’ But what about the actions of private corporations, perhaps supported by private security contractors, that seek to safeguard a valuable resource claim? The OST does nothing to regulate the actions of such entities. The US’s 2015 Space Act created opportunities for future lunar and asteroid mining by US commercial space companies, and US competitors aren’t likely to sit back and passively watch US companies gain an advantage. That implies a challenge to Article II of the OST, because acquiring a resource and then selling it for profit implies ownership. If Article II is weakened indirectly through commercial activity, competitors may see an opportunity to claim territory on the moon and other celestial bodies. The rationale might be control of a valuable resource or exploitation of high ground in astrostrategic terrain for military advantage. That would undermine the OST at its most fundamental level. This isn’t a justification for imposing draconian governmental or international regulation on the rapidly growing commercial space sector. Such a step would smother innovation and reduce incentives for commercial space activities, slowing the growth of a future off-Earth space industry. Going back to Space 1.0 is entirely the wrong path. The OST needs to be updated to address some of the potential risks in a more contested, congested and competitive space domain extending from low-Earth orbit out to cislunar space and beyond. That would make the treaty more relevant to the future Space 2.0 paradigm in which the fastest progress is led by the commercial sector, a significant portion of which is untethered by government direction. In particular, managing the impact of new commercial space actors that will seek access to and profit from space resources should be a high priority if the OST is to remain relevant. The 1979 Moon Treaty sought to expand on the OST and address some of its shortcomings. It wasn’t ratified by the US, the Russian Federation or China, and so isn’t binding. Alongside an updated OST, a new Moon Treaty that facilitates peaceful commercial activities on the moon and other celestial bodies would be a good step forward. But the updates need to address the shortcomings of both treaties. They should clearly delineate the boundaries between normal commercial activities in what should be a global commons and state or state-owned actors that could compete for national gain. The alternative is a free-for-all on the high frontier, with dangerous risks for major-power competition in a contested space environment.

#### Loopholes that allow Commercial Appropriation are weaponized to undermine Article II of the OST.

Stockwell 20 Samuel Stockwell 7-20-2020 "Legal ‘Black Holes’ in Outer Space: The Regulation of Private Space Companies" <https://www.e-ir.info/2020/07/20/legal-black-holes-in-outer-space-the-regulation-of-private-space-companies/> (Writer at E-IR)//Elmer

On 30th April 2020, NASA – the US government’s space agency ­– awarded three private space companies a joint-contract worth $967m to complete a lunar mission by 2024, in what was celebrated as “the last piece that [America] need[s] in order to get to the moon” by NASA administrator Jim Brindestine (The Telegraph, 2020). Yet, whilst this development was widely covered in the media, less coverage has focused on the extent to which existing international legislation surrounding outer space endeavours appropriately applies to private entities. Indeed, the prospect of a corporate foothold within the extra-terrestrial domain has thrown up both a mixture of optimism and concern regarding the potential benefits of expanding capital projects into space (Adolph, 2006; Dickens & Ormrod, 2007). By adopting the 1967 UN Outer Space Treaty (OST) as an analytical framework in relation to the rise of the so-called US ‘NewSpace’ actors, this essay argues that there are significant legal ambiguities regarding the status of private space companies in orbital space. Such loopholes allow the US government to circumvent its own obligations to the OST, whilst simultaneously undermining the notion of space as a ‘global commons’ through a commodification process. The lack of specificity within the OST surrounding private property rights over extra-terrestrial resources risks the prospect of reinforcing Earth-bound wealth inequalities and US dominance in space, by restricting the potential economic benefits for the broader global citizenry in favour of a narrow class of wealthy American investors. Moreover, the OST’s weak clause regarding the regulation of space surveillance risks the incentivisation of a ‘global panopticon’ network of US satellites. The rise of dual-use technology is blurring the boundaries between military and civilian observations, raising serious ethical concerns over the nature of US space-based data collection. Finally, the increasing number of private satellite constellations is facilitating the possibility of cataclysmic space debris collisions which could exacerbate geopolitical tensions. Such developments are also contributing towards the contamination of the broader space environment in ways that the OST had never envisioned.

#### Credible OST solves Space War.

Johnson 17 Christopher Johnson 1-23-2017 “The Outer Space Treaty at 50” , <http://thespacereview.com/article/3155/1> (graduate of Leiden University’s International Institute of Air and Space Law and the International Space University)//Elmer

As mentioned, many of the provisions of the Outer Space Treaty were borrowed from previous UN General Assembly resolutions. But as resolutions alone, these documents were non-binding and did not require states to alter their behavior. And while UN General Assembly resolutions are not normally law-making exercises, they do record the commonly-held expression of intentions by the states in the General Assembly, and make political recommendations to UNGA Members (or to the UN Security Council). UNGA Resolutions can also set priorities and mold opinion for inclusion in subsequent treaties. The prohibition on the placement of nuclear weapons and other weapons of mass destruction in outer space or their installation on celestial bodies was taken from UNGA Resolution 1884 of 1963. The resolution: [s]olemnly calls upon all States… [t]o refrain from placing in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, installing such weapons on celestial bodies, or stationing such weapons in outer space in any other manner. This prohibition was transferred to the Outer Space Treaty, and thereby remade into international treaty law. As President Johnson pointed out in his recommendation to Congress to ratify the Outer Space Treaty, “the realms of space should forever remain realms of peace.”5 He continued: We know the gains of cooperation. We know the losses of the failure to cooperate. If we fail now to apply the lessons we have learned, or even if we delay their application, we know that the advances into space may only mean adding a new dimension to warfare. If, however, we proceed along the orderly course of full cooperation we shall, by the very fact of cooperation, make the most substantial contribution toward perfecting peace.6 The agreement contained in Article IV of the Outer Space Treaty reflects an agreement between the US and the USSR, as obligations restricting their freedom of action. Why would a state intentionally place a restriction on itself? Isn’t it better to merely keep outer space as unregulated as possible? Since there were only two states then capable of venturing into outer space, why did either state agree to rules governing its actions? It may seem counterintuitive, but the deeper rationale behind security arrangements like this is that the parties actually benefit in the long-term from placing mutual restrictions on their behavior. Agreeing to restrict your freedom of action has deep links to the usefulness or utility of law itself. Consider driving a car: in order to get a license, you agree to observe certain rules, and the license signals your obligation to obey these rules. However, sometimes adhering to those rules is not only inconvenient (such as stopping at stop signs when there’s nobody else at the intersection), it is also against your short term-interests (you have an appointment or will otherwise suffer from observing the rules.) However, agreeing to operate within a system where your freedoms are sometimes restricted can have the effect of actually increasing your freedom over the long term. Wouldn’t you rather live in a state where traffic laws exist, and other drivers agree to observe them? Isn’t that system preferable to living in a state without traffic rules? Indeed, a system with traffic rules increases not just freedom in general, but overall safety and orderliness. Consequently, because the system with rules is preferable to the system without rules, your willingness to use the roads allows you to travel with greater security and ease. You are better assured of the likelihood that you will get to your intended destination without some other driver crashing into you. Knowing that safe travel is likely, you are more willing to take trips more often, and to farther destinations. Your freedom is actually increased over the long term because you are willing to suffer temporary, short-term restrictions such as inconvenient red lights. Long-term rationality warrants adherence to efficient systems of law. Correctly-balanced rules help increase long-term benefits (like safety and security) that would otherwise be unattainable without a system of rules. It is this rationale that also underpins international treaty-making. Today, the current absence of nuclear weapons or other weapons of mass destruction in outer space attests to the bargain struck in the Outer Space Treaty being a successful one, where security (and the liberty and freedom possible with security) were furthered by the mutual exchange of restrictions that states placed upon themselves. The more than 50 years of peaceful uses of outer space, including cooperation between states who remain rivals elsewhere, are the rich long-term gains resulting from the Outer Space Treaty.

#### Space War cause Nuclear War.

Gallagher 15 “Antisatellite warfare without nuclear risk: A mirage” <http://thebulletin.org/space-weapons-and-risk-nuclear-exchanges8346> (interim director of the Center for International and Security Studies in Maryland, previous Executive Director of the Clinton Administration’s CTBT Treaty Committee, an arms control specialist at the State Dept., and a faculty member at Wesleyan)//Elmer

In recent decades, however, as space-based reconnaissance, communication, and targeting capabilities have become integral elements of modern military operations, strategists and policy makers have explored whether carrying out antisatellite attacks could confer major military advantages without increasing the risk of nuclear war. In theory, the answer might be yes. In practice, it is almost certainly no. Hyping threats. No country has ever deliberately and destructively attacked a satellite belonging to another country (though nations have sometimes interfered with satellites' radio transmissions). But the United States, Russia, and China have all tested advanced kinetic antisatellite weapons, and the United States has demonstrated that it can modify a missile-defense interceptor for use in antisatellite mode. Any nation that can launch nuclear weapons on medium-range ballistic missiles has the latent capability to attack satellites in low Earth orbit. Because the United States depends heavily on space for its terrestrial military superiority, some US strategists have predicted that potential adversaries will try to neutralize US advantages by attacking satellites. They have also recommended that the US military do everything it can to protect its own space assets while maintaining a capability to disable or destroy satellites that adversaries use for intelligence, communication, navigation, or targeting. Analysis of this sort often exaggerates both potential adversaries’ ability to destroy US space assets and the military advantages that either side would gain from antisatellite attacks. Nonetheless, some observers are once again advancing worst-case scenarios to support arguments for offensive counterspace capabilities. In some other countries, interest in space warfare may be increasing because of these arguments. If any nation, for whatever reason, launched an attack on a second nation's satellites, nuclear retaliation against terrestrial targets would be an irrational response. But powerful countries do sometimes respond irrationally when attacked. Moreover, disproportionate retaliation following a deliberate antisatellite attack is not the only way in which antisatellite weapons could contribute to nuclear war. It is not even the likeliest way. As was clearly understood by the countries that negotiated the Outer Space Treaty, crisis management would become more difficult, and the risk of inadvertent deterrence failure would increase, if satellites used for reconnaissance and communication were disabled or destroyed. But even if the norm against attacking another country’s satellites is never broken, developing and testing antisatellite weapons still increase the risk of nuclear war. If, for instance, US military leaders became seriously concerned that China or Russia were preparing an antisatellite attack, pressure could build for a pre-emptive attack against Chinese or Russian strategic forces. Should a satellite be struck by a piece of space debris during a crisis or a low-level terrestrial conflict, leaders might mistakenly assume that a space war had begun and retaliate before they knew what had actually happened. Such scenarios may seem improbable, but they are no more implausible than the scenarios that are used to justify the development and use of antisatellite weapons.

#### Nuke war causes extinction AND outweighs other existential risks

* Checked

PND 16. internally citing Zbigniew Brzezinski, Council of Foreign Relations and former national security adviser to President Carter, Toon and Robock’s 2012 study on nuclear winter in the Bulletin of Atomic Scientists, Gareth Evans’ International Commission on Nuclear Non-proliferation and Disarmament Report, Congressional EMP studies, studies on nuclear winter by Seth Baum of the Global Catastrophic Risk Institute and Martin Hellman of Stanford University, and U.S. and Russian former Defense Secretaries and former heads of nuclear missile forces, brief submitted to the United Nations General Assembly, Open-Ended Working Group on nuclear risks. A/AC.286/NGO/13. 05-03-2016. <http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/OEWG/2016/Documents/NGO13.pdf> //Re-cut by Elmer

Consequences human survival 12. Even if the 'other' side does NOT launch in response the smoke from 'their' burning cities (incinerated by 'us') will still make 'our' country (and the rest of the world) uninhabitable, potentially inducing global famine lasting up to decades. Toon and Robock note in ‘Self Assured Destruction’, in the Bulletin of Atomic Scientists 68/5, 2012, that: 13. “A nuclear war between Russia and the United States, even after the arsenal reductions planned under New START, could produce a nuclear winter. Hence, an attack by either side could be suicidal, resulting in self assured destruction. Even a 'small' nuclear war between India and Pakistan, with each country detonating 50 Hiroshima-size atom bombs--only about 0.03 percent of the global nuclear arsenal's explosive power--as air bursts in urban areas, could produce so much smoke that temperatures would fall below those of the Little Ice Age of the fourteenth to nineteenth centuries, shortening the growing season around the world and threatening the global food supply. Furthermore, there would be massive ozone depletion, allowing more ultraviolet radiation to reach Earth's surface. Recent studies predict that agricultural production in parts of the United States and China would decline by about **20 percent** for four years, and by 10 percent for a decade.” 14. A conflagration involving USA/NATO forces and those of Russian federation would most likely cause the deaths of most/nearly all/all humans (and severely impact/extinguish other species) as well as destroying the delicate interwoven techno-structure on which latter-day 'civilization' has come to depend. Temperatures would drop to below those of the last ice-age for up to 30 years as a result of the lofting of up to 180 million tonnes of very black soot into the stratosphere where it would remain for decades. 15. Though human ingenuity and resilience shouldn't be underestimated, human survival itself is arguably problematic, to put it mildly, under a 2000+ warhead USA/Russian federation scenario. 16. The Joint Statement on Catastrophic Humanitarian Consequences signed October 2013 by 146 governments mentioned 'Human Survival' no less than 5 times. The most recent (December 2014) one gives it a highly prominent place. Gareth Evans’ ICNND (International Commission on Nuclear Non-proliferation and Disarmament) Report made it clear that it saw the threat posed by nuclear weapons use as one that at least threatens what we now call 'civilization' and that potentially threatens human survival with an immediacy that even climate change does not, though we can see the results of climate change here and now and of course the immediate post-nuclear results for Hiroshima and Nagasaki as well.

### Fw

#### Ethics begin a posteriori.

#### 1. Knowledge is based on experience – I wouldn’t know 2+2=4 without experience of objects nor the color red without some experience of color. We can’t obtain evidence of goodness without experience.

#### 2. Indifference – Even if there are apriori moral truths, I can choose to ignore them. Cognition is binding – if I put my hand on a hot stove, I can’t turn off my natural aversion to it.

Nothing in the framework triggers p and p

#### The standard is act hedonistic util. Prefer –

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

Blum et al. 18

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**Pleasure** is not only one of the three primary reward functions but it also **defines reward.** As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the **basis for hedonic theories** of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10].

Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14].

Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain’s pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals.

Evolutionary theories of pleasure: The love connection BO:D

Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others–when we are in love or desperately search for it.

It is well established that modern biological theory conjectures that **organisms are** the **result of evolutionary competition.** In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring.

Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding.

There have been theories linking pleasure as a required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health.

Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage.

Finding happiness is different between apes and humans

As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure.

Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are **many brain regions**, often termed hot and cold spots, that significantly **modulate** (increase or decrease) our **pleasure or** even produce **the opposite** of pleasure— that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows— producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered.

Desire and reward centers

It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called “REWARD” involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation.

In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the “Feel Good” response. This defined system of the brain is involved in all addictions –substance, and non –substance related. In 1995, our laboratory coined the term “Reward Deficiency Syndrome” (RDS) to describe genetic and epigenetic induced hypodopaminergia in the “Brain Reward Cascade” that contribute to addiction and compulsive behaviors [3,6,41].

Furthermore, ordinary “liking” of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for “sweet”; and in Greek, hodone is the term for “pleasure.” Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42].

Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans.

In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: “liking,” “learning,” and “wanting” [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or “wanting” hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45].

Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic “high” that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between “stages,” and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations.

Over many years the controversy of dopamine involvement in especially “pleasure” has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50]

In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders.

In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: “Humans have evolved a dopamine system that is different than the one in chimpanzees.” This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: “It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction).” Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, **there was** a **remarkable contrast in** the **neocortices**, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain’s reward system; the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson’s, schizophrenia and spectrum disorders such as autism and addiction or RDS.

Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans’ ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible alterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shilting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual’s physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

#### 2 – No intent-foresight distinction – if I foresee a consequence, then it becomes part of my deliberation since its intrinsic to my action

#### 3 – Actor spec – governments lack wills or intentions and inevitably deals with tradeoffs – outweighs because agents have differing obligations.

#### 4 – No act omission distinction – choosing not to act is an action in of itself since you had to make an active decision to omit.

#### 5 – Util is the best theoretically justified framework

#### 1] Ground – Util cares about all impacts which ensures link and impact turn ground for both sides. Util impacts are easy to contextualize and allows for all types of ground with work debaters have to do.

#### 2] Novice Accessibility – Util is fairer and more educational for novice debaters since contention/LARP ground is what they learn you crowd out novice debaters by debating up and guts accessibility for trad debate. B] Encourages tricking novices and preventing clash and engagement on your offense. OW on participation to the activity

#### 3] Topic Ed – LARP authors mutually agree upon consequentialism when talking oppression and big stick impacts. That’s key for predictability within the resolutional stasis point.

#### B. TJFs first – substance begs the question of a framework being good for debate – fairness is a gateway issue to deciding the better debater and education is the reason schools fund debate

#### No calc indicts – they’re blippy nibs that set the aff at an unfair advantage since they only have to win one while we have to beat them all – voting issue for fairness

#### Extinction first –

#### 1 – Forecloses future improvement – we can never improve society because our impact is irreversible which proves moral uncertainty

#### 2 – Turns suffering – mass death causes suffering because people can’t get access to resources and basic necessities

#### 3 – Objectivity – body count is the most objective way to calculate impacts because comparing suffering is unethical

#### 3] Interpretation: The negative must concede the affirmative framing mechanism if its normatively justfied, disclosed, and topical.

#### Violation: It’s preemptive

#### Prefer-

#### 1] Time skew- Winning the negative framework moots 6 minutes of 1AC offense and forces a 1AR restart against a 7 min 1NC – that outweighs on quantifiability and reversibility – I can’t get back time lost and it’s the only way to measure abuse.

#### 2] Topic Ed- Every debate would just be a framework debate which crowds out our ability to have core debates about the topic – that outweighs- A] Time Frame- We only have 2 months to debate the topic B] Inclusion- Phil and K literature is incredibly dense and requires a vast amount of prior knowledge and experience which excludes novices while topic literature is less esoteric C] Constitutivism- The only thing intrinsic to debate is the topic so it should be prioritized D] Portability- topics are carefully chosen to have modern relevance so only debate about them can generate portable skills.

#### 3] Prep skew- We can’t predict every single negative framework before round but they know the aff coming into round which makes pre-tournament prep impossible. Especially true since there are millions of K’s and NC’s that could negate. Prep skew outweighs A] Sequencing- It’s a perquisite engaging in-round since you need prep to debate B] Engagement- It ruins the quality and depth of discussions that make debate rounds educational.

#### No RVI’s on 1AC Theory- A] Incentivizes a 7 min collapse in the 1NC which destroys the short 1ar B] Moots all the time we spend reading the 1ac

#### 1AC Theory is DTD—its key to making sure they’re held accountable

#### Competing interps on 1AC Theory- A] 7 minutes is more than enough time to robustly justify their counter interp B] Gives us the opportunity to flesh out our model of debate since it’s introduced earlier in the aff

#### 1AR theory is legit – anything else means infinite abuse

#### – drop the debater – 1AR is too short to make up for the time trade-off

#### – no RVIs – 6 min 2NR means they can brute force me every time

#### – competing interps – reasonability narrows the theory debate to one issue of brightline, making it easy for the Neg to collapse to the issue in the long 2NR

**3] Permissibility and presumption affirm**

**A] Statements are true before false since if I told you my name, you’d believe me.**

**B] Epistemics – we wouldn’t be able to start a strand of reasoning since we’d have to question that reason.**

**C] Illogical – presuming statements false is illogical since you can’t say things like P and ~P are both wrong.**

**D] Presuming obligations is logically safer since it’s better to be supererogatory than fail to meet an obligation.**

**E] Presuming statements false is impossible since we can’t operate in a world where we don’t trust anything.**

**F] To negate means to deny the truth of, which means if there isn’t offense to deny the truth of you should affirm.**

**G] Otherwise we’d have to have a proactive justification to do things like drink water.**

**H] If anything is permissible, then definitionally so is the aff since there is nothing that prevents us from doing it.**

#### I] Negation Theory- Negating requires a complete absence of an existing obligation

Negate [is to]: to deny the existence of

That’s Dictionary.com- “Negate” https://www.dictionary.com/browse/negate.

#### J] empirics

**Shah 19,**[Shah, Sachin. “A STATISTICAL ANALYSIS OF SIDE-BIAS ON THE 2019 JANUARY-FEBRUARY LINCOLN-DOUGLAS DEBATE TOPIC.” NSD Update, National Symposium of Debate, 16 Feb. 2019, <http://nsdupdate.com/2019/a-statistical-analysis-of-side-bias-on-the-2019-january-february-lincoln-douglas-debate-topic/> ]//LHPSS accessed 9/4/19

As a final note, it is also interesting to look at the trend over multiple topics. In the rounds **from** 93 TOC bid distributing tournaments (**2017 – 2019** YTD), **the neg**ative **won 52.99% of ballots** (**p-value < 0.0001)** and 54.63% of upset rounds (p-value < 0.0001). **This suggests the bias might be structural, and not topic specific, as this data spans six different topics.**

#### 9] Reject non-naturalist ethics –

#### A] Only moral naturalism can explain the influence of moral facts on the physical world – ethics must be understood a posteriori.

Papineau David [Professor of Philosophy King's College London], First published Thu Feb 22, 2007; substantive revision Tue Mar 31, 2020 https://plato.stanford.edu/entries/naturalism/#MorFac

Moore took this argument to show that moral facts constitute a distinct species of non-natural fact. However, any such non-naturalist view of morality faces immediate difficulties, deriving ultimately from the kind of causal closure thesis discussed above. If all physical effects are due to a limited range of physically-grounded natural causes, and if moral facts lie outside this range, then it follow that moral facts can never make any difference to what happens in the physical world (Harman 1986). At first sight this may seem tolerable (perhaps moral facts indeed don’t have any physical effects). But it has awkward epistemological consequences. For beings like us, knowledge of the spatiotemporal world is mediated by physical processes involving our sense organs and cognitive systems. If moral facts cannot influence the physical world, then it is hard to see how we can have any knowledge of them. The traditional non-naturalist answer to this problem is to posit a non-natural faculty of “moral intuition” that gives us some kind of direct access to the moral realm (as explained in Ridge 2014: Section 3). However, causal closure once more makes it difficult to make good sense of this suggestion. Presumably at some point the posited intuitive faculty will need to make a causal difference in the physical world (by affecting what people say and do, for example). And at this point the causal closure argument will bite once more, to show that a non-natural intuitive faculty would implausibly imply that some of our actions are strongly overdetermined by two metaphysically independent antecedents. Moral non-naturalism has had something of a revival in recent years, with defenders including Russ Shaffer-Landau (2003), Ralph Wedgwood (2007), Derek Parfit (2011) and David Enoch (2011). Still, the challenge of accounting for our access to non-natural moral facts remains, and it is debatable whether any of these writers has found a satisfactory alternative to a causally problematic faculty of intuition. Perhaps the most developed suggestion is Enoch’s (2011) appeal to the indispensability of non-natural moral facts to moral reasoning, a line of argument that is analogous to Hilary Putnam’s case for non-natural mathematical objects, to be discussed in the next section below. But Enoch’s appeal arguably faces many of the same general objections as Putnam’s argument, as well as objections specific to the moral realm (see Leng 2016). In light of the difficulties facing moral non-naturalism, most contemporary moral philosophers opt instead for some species of naturalist view. We can divide the naturalist options here into two broad categories: irrealist and realist. Irrealist moral naturalists aim to account for moral discourse by offering naturalist accounts of the social and linguistic and practices that govern it, but without supposing that moral utterances report on moral facts with a substantial independent existence (Joyce 2015). By contrast, naturalist moral realists agree with moral non-naturalists that substantial moral facts exist, but seek to locate them in the natural realm rather than in some sui generis non-natural realm (Lenman 2014). Both these broad categories have further sub-divisions. Among the irrealists, we can distinguish explicitly non-cognitivist views like emotivism and prescriptivism which deny that moral judgements express beliefs (Hare 1952, Blackburn 1993, Gibbard 2003) from cognitivist views that accept that moral judgements do express beliefs but deny a substantial reality to the putative facts to which they answer; and among the latter cognitivist views we can distinguish error-theoretic fictionalist options which view moral judgements as simply false (Mackie 1977, Kalderon 2005) from projectivist options which hold that moral discourse is sufficiently disciplined for its judgements to qualify for a species of truth even though they do not report on independently existing causally significant facts (Wright 1992, Price 2011). Naturalist moral realism also comes in different varieties. In recent debates two versions have figured prominently; “Cornell realism”, which includes moral facts among the causally significant facts but resists their type-reducibility to non-moral facts (Sturgeon 1985, Boyd 1988), and “moral functionalism” which is happy to equate moral facts with straightforwardly descriptive facts (Jackson 1998). Any kind of moral naturalist realist needs to reject Moore’s open question argument. There are two alternatives here. One is to insist that Moore’s posited openness is relatively superficial, and that there is no principled barrier to inferring moral facts a priori from the non-moral natural facts, even if such inferences will sometimes require a significant amount of information and reflection. The other is to argue that the constitution of moral facts by non-moral natural facts is an a posteriori matter, akin to the relation between water and H2O, and that therefore Moore’s openness only points to a conceptual gap, not a metaphysical one (Ridge 2014: Section 2).