## 1NC – Framing

#### The meta-ethic is phenomenalism – induction first

Sayre-McCord 1 Geoffrey Sayre-McCord, Philosophy, University of North Carolina, Chapel Hill, "Mill's “Proof” Of The Principle of Utility: A More Than Half-Hearted Defense", Social Philosophy and Policy, 2001, accessed: 1 April 2020, https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/mills-proof-of-the-principle-of-utility-a-more-than-halfhearted-defense/FDBE07CBE08D4E17523930BF8C7BBC32, R.S.

When it comes to visibility, no less than desirability, Mill explicitly denies that a "proof" in the "ordinary acceptation of the term" can be offered.25 As he notes, "To be incapable of proof by reasoning is com mon to all first principles; to the first premises of our knowledge, as well as to those of our conduct."26 Nonetheless, support -- that is, evidence, though not proof -- for the first premises of our knowledge is provided by "our senses, and our internal consciousness." Mill's suggestion is that, when it comes to the first principles of conduct, desire play the same epistemic role that the senses play, when it comes to the first principles of knowledge. To understand this role, it is important to distinguish the fact that someone is sensing something from what is sensed, which is a distinction mirrored in the contrast bet ween the fact that someone is desiring something and what is desired. In the case of our senses, the evidence we have for our judgments concerning sensible qualities traces back to what is sensed, to the content of our sense-experience. Likewise, Mill is suggesting, in the case of value, the evidence we have for our judgments concerning value traces back to what is desired, to the content of our desires. Ultimately, the grounds we have for holding the principles we do must, he thinks, be traced back to our experience, to our senses and desires. Yet the evidence we have is not that we are sensing or desiring something but what it is that is sensed or desired. When we are having sensations of red, when what we are looking at appears red to us, we have evidence (albeit overrideable and defeasible evidence) that the thing is red. Moreover, if things never looked red to us, we could never get evidence that things were red, and would indeed never have developed the concept of redness. Similarly, when we are desiring things, when what we are considering appears good to us, we have evidence (albeit overrideable and defeasible evidence) that the thing is good. Moreover, if we never desired things, we could never get evidence that things were good, and would indeed never have developed the concept of value. Recall that desire, for Mill, like taste, touch, sight, and smell, is a "passive sensibility." All of these, he holds, provide us with both the content that makes thought possible and the evidence we have for the conclusions that thought leads us to embrace. "Desiring a thing" and "thinking of it as desirable (unless for the sake of its consequences)" are treated by Mill as one an d the same, just as seeing a thing as red and thinking of it as red are one and the same. Accordingly, a person who desires x is a person who ipso facto sees x as desirable. Desiring something, for Mill, is a matter of seeing it under the guise of the good. This means that it is important, in the context of Mill's argument, that one not think of desires as mere preferences or as just any sort of motive. They constitute, according to Mill, a distinctive subclass of our motivational states, and are distinguished (at least in part) by t heir evaluative content. Thus, Mill is neither assuming nor arguing that something is good because we desire it; rather, he is depending on our desiring it as establishing that we see it as good. At the same time, while desiring something is a matter of seeing it as good, one could, on Mill's view, believe that something is good without desiring it, just as one can believe something is red without seeing it as red. While desire is supposed to be the fundamental source of our concept of, and evidence for, desirability, once the concept is in place there are contexts in which we will have reason to think it applies even when the corresponding sensible experience is lacking. Indeed, in Chapter IV, Mill is concerned not with generating a desire, but with justifying the belief that happiness is desirable, and the only thing desirable, as an end, and so concerned with defending the standard for determining what should be desired. Mill's aim is to take what people already, and he thinks inevitably, see as desirable and argue that those views commit them to the value of the general happiness (whet her or not their desires follow the deliverances of t heir reason). Those who, like Mill, desire the general happiness already hold the view that the general happiness is desirable. They accept the claim that Mill is trying to defend. As Mill knows, however, there are many who do not have this desire -- many who desire only their own happiness, and some who even desire that others suffer. These are the people he sets out to persuade, along with others who are more generous and benevolent, but who nonetheless do not see happiness as desirable, and the only thin g desirable, as an end. Mill's argument is directed at convincing t hem all -- whether their desires follow or not -- that they have grounds for, and are in fact already com mitted to, regarding the happiness of others as valuable as an end. Mill recognizes that whatever argument he might hope to offer will need to appeal to evaluative claims people already accept (since he takes to heart Hume's caution concerning inferring an 'ought' from an 'is'). The claim Mill thinks he can appeal to -- that one's own happiness is a good (i.e. desirable) -- is something licensed as available by people desiring their own happiness. Yet he is not supposing here that the fact that they desire their own happiness, or anything else, is proof that it is desirable, just as he would not suppose that the fact that someone sees something as red is proof that it is. Rather, he is supposing that if people desire their own happiness, or see something as red, one can rely on t hem having available, as a premise for further argument, the claim that their own happiness is desirable or that the thing is red (at least absent contrary evidence). As he puts it in the third paragraph, "If the end which the utilitarian doctrine proposes to itself were not, in theory and in practice, acknowledged to be an end nothing could ever convince any person that it was so." Thus, in appealing to the analogy bet ween judgments of sensible qualities and judgments of value, Mill is not trading on an ambiguity, nor does his argument here involve identifying being desirable with being desired or assuming that "desirable" means "desired." He is instead relying consistently on an empiricist account of concepts and their application -- on a view according to which we have the concepts, evidence, and knowledge we do only thanks to our having experiences of a certain sort. In the absence of the relevant experiences, he holds (with other empiricists), we would not only lack the required evidence for our judgments, we would lack the capacity to make the judgments in the first place. In the presence of the relevant experiences, though, we have both the concepts and the required evidence -- "not only all the proof which the case admits of, but all which it is possible to require."

#### The standard is maximizing expected wellbeing. Pleasure and pain are intrinsic value and disvalue – everything else regresses – robust neuroscience.

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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** theneocortices, 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.

#### Prefer:

#### 1] Bindingness-- I could put my hand on a hot stove and I’d automatically pull it back before a signal is sent to my brain-- Anything else fails to be morally binding because one could always ask “why not?”

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

#### 3] Only consequentialism explains degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first which is the most intuitive. That outweighs:

#### A] Parsimony – metaphysics relies on long chains of questionable claims that make conclusions less likely.

#### B] Hijacks – intuitions are inevitable since even every framework must take some unjustified assumption as a starting point.

#### TJFs---util is the most theoretically legitimate framework.

#### A] Predictable literature -- util ensures that we have a wide breadth of literature about the topic to read because contention level arguments are centered around current events and substantive. Outweighs because of accessibility – it might be difficult for debaters to access paywalled philosophical journals and to make sense of them, but general topic literature like news and op eds are easily accessible.

#### B] Topic ed -- util ensures topical research and debate because we have to analyze the consequences of the plan versus the neg advocacy. Outweighs on reversibility – we can learn about Kant anywhere outside the round but topical debate happens these two months.

#### 8] Extinction first under any framework

#### A] Future lives -- trillions of future lives are lost. They are just as valuable as current ones – anything else says some lives are worth less than others which is genocidal rhetoric

#### B] Reversibility -- extinction forecloses future improvement; prefer -- if we’re unsure about which interpretation of the world is true, we should preserve it to figure things out.

## 1NC – DA

#### China and Russia are pursuing hypersonics now.

Loiaconi 2-4 [Stephen Loiaconi, The National Desk, 2-4-22, "China, Russia advancing hypersonic weapons raises concerns at Pentagon," KVII, <https://abc7amarillo.com/news/nation-world/china-russia-advancing-hypersonic-weapons-raises-concerns-at-pentagon> [accessed 2-6-22] Lydia

WASHINGTON (TND) — Amid mounting anxiety over Russian and Chinese hypersonic weapons development, the Pentagon is pressing American defense contractors to catch up, but some arms control experts are uncertain how urgently the U.S. military needs such weapons. Defense Secretary Lloyd Austin and Deputy Defense Secretary Kathleen Hicks met with top executives from more than two dozen companies Thursday to urge them to accelerate hypersonic weapons research. The roundtable identified several obstacles hindering U.S. development, including supply chain constraints and logistical challenges. “Participants identified a need to expand access to modeling capabilities and testing facilities in order to adopt a ‘test often, fail fast, and learn’ approach which will accelerate the fielding of hypersonic and counter-hypersonic systems,” Pentagon spokesperson Eric Pahon said in a statement. [Hypersonic weapons](https://www.atlanticcouncil.org/in-depth-research-reports/report/primer-on-hypersonic-weapons-in-the-indo-pacific-region/) travel at five times the speed of sound or faster, making them difficult for conventional missile defense systems to detect and intercept. Russia and China are believed to be making advances toward launching hypersonic devices that would be capable of carrying a nuclear warhead, including recent tests of missiles and glide vehicles. [North Korea claimed](https://abc7amarillo.com/news/nation-world/north-korea-claims-successful-test-of-hypersonic-missile) to have tested hypersonic weapons in September and January, as well. Although the U.S. pioneered hypersonic technology decades ago, the Pentagon eased off research after failed tests in the early 2000s. In recent years, China has conducted hundreds of tests of hypersonic devices, while the U.S. has conducted only a handful. “We’ve got to invest more in defenses, but we’re not without capabilities, and our adversaries should know that,” former national security adviser Robert O’Brien said at a Richard Nixon Foundation event [earlier this week](https://www.nationalreview.com/corner/pompeo-chinese-hypersonic-threat-a-very-difficult-problem/). The Pentagon has [several projects underway](https://www.defense.gov/News/News-Stories/Article/Article/2518370/defense-officials-outline-hypersonics-development-strategy/) aimed at developing operational prototypes for a weapon. A senior Air Force official indicated in an interview [with Breaking Defense](https://breakingdefense.com/2022/01/air-forces-first-hypersonic-missile-could-still-start-production-this-year/) last month that tests of hypersonic missiles are scheduled throughout the coming year. Three hypersonic tests conducted by the U.S. military in 2021 failed, and one of the CEOs who attended Thursday’s meeting [told CNN](https://www.cnn.com/2022/02/03/politics/pentagon-hypersonic-weapons-defense-companies-meeting/index.html) an industry-wide “fear of failure” has undermined progress. However, experts say failing and figuring out what went wrong is an important part of the weapons development process. “As I understand the technologies involved, you have to fail a lot of times before you get it right,” said John Erath, senior policy director at the Center for Arms Control and Non-Proliferation. The White House’s 2022 budget sought $3.8 billion for hypersonic weapons research, as well as nearly $250 million for hypersonic defense. Congress approved most of the requested spending in the 2022 National Defense Authorization Act, which was signed by President Joe Biden in December. “[Russia and China] now have the lead, but they are rushing Fords into the field as the United States moves slowly to perfect its Ferrari,” said Matthew Kroenig, deputy director of the Scowcroft Center for Strategy and Security at the Atlantic Council. “So, I am confident we will have superior technology eventually, but we are currently behind.” The U.S. and Japan also announced an agreement last month to increase collaboration on hypersonic missile defense, citing aggressive actions [by China and North Korea](https://abc7amarillo.com/news/nation-world/nkorea-says-hypersonic-missile-tested-to-modernize-weaponry). It is unclear how that partnership will impact the development of new technologies. “When Japanese and American researchers bring their complementary strengths to bear, we can outcompete and out-innovate anyone,” Secretary of State Antony Blinken said at the time. According to a recent [Congressional Research Service report](https://sgp.fas.org/crs/weapons/R45811.pdf), most U.S. hypersonic programs are not geared toward carrying nuclear warheads, which means they will require greater accuracy. Getting something that moves that fast to hit a target with precision will not be easy, though. “It’s a very difficult technology to master, and it’s not one that fits all that well with the way the U.S. military does things,” Erath said. In a report published in [Science & Global Security](https://www.nytimes.com/2021/01/15/science/hypersonic-missile-weapons.html) last year, independent experts questioned the value of hypersonic technology, with one author calling claims made by defense officials “nonsense.” The Defense Department pushed back, insisting the report was based on outdated information, but even some within the military have voiced skepticism about dedicating more resources to hypersonic weapons research. “It isn’t obvious that the right response to someone else doing hypersonics is that we should be doing hypersonics,” Air Force Secretary Frank Kendall[said last month](https://www.washingtonpost.com/opinions/2022/02/03/america-led-hypersonic-technology-then-other-countries-sped-past/), according to The Washington Post. Still, other experts say China’s investment in hypersonics and other military technologies presents a serious threat to the U.S. and its allies if it proceeds unchecked. According to Kroenig, maintaining military superiority over Beijing and Moscow could be essential to preserving global peace in the years ahead. “International peace and stability have been undergirded by U.S. military primacy for decades,” he said. “If Russia and China gain a military advantage, they will use it to revise the international order and aggress against their neighbors.”

#### The plan gets rid of critical mega constellations that detect hypersonics

Trevithick 20 [Joseph Trevithick, 10-5-2020, "Work Begins On Starlink-Like Constellation Of Small Hypersonic Missile-Tracking Satellites," Drive, <https://www.thedrive.com/the-war-zone/36909/work-begins-on-starlink-like-constellation-of-small-hypersonic-missile-tracking-satellites> [accessed 2-5-22] lydia

The U.S. military has hired L3Harris and [SpaceX](https://www.thedrive.com/the-war-zone/32346/the-air-force-and-spacex-are-teaming-up-for-a-massive-live-fire-exercise) to build small satellites with powerful infrared sensors [capable of spotting and tracking](https://www.thedrive.com/the-war-zone/18882/stratcom-boss-makes-case-for-satellites-capable-of-tracking-hypersonic-weapons) ballistic [missiles](https://www.thedrive.com/the-war-zone/36149/how-chinas-ballistic-missile-and-nuclear-arsenal-is-ballooning-according-to-the-pentagon) and [hypersonic weapons](https://www.thedrive.com/the-war-zone/31215/u-s-inspectors-have-examined-russias-imminently-operational-hypersonic-missile). These satellites could become part of a large and broader [early warning](https://www.thedrive.com/the-war-zone/22907/usaf-hands-lockheed-billions-for-new-warning-satellites-amid-rush-for-more-space-sensors) constellation with hundreds of space-based sensors and communications nodes watching for incoming threats, monitoring their flight, and potentially providing targeting data to [missile defense assets](https://www.thedrive.com/the-war-zone/32492/the-navys-arleigh-burke-class-destroyers-to-be-armed-with-hypersonic-weapon-interceptors).

The Pentagon [announced](https://www.defense.gov/Explore/News/Article/Article/2372647/agency-awards-contracts-to-build-out-tracking-layer-of-national-defense-space-a/) that the Space Development Agency (SDA) [had awarded](https://www.defense.gov/Newsroom/Contracts/Contract/Article/2372482/) the contracts to L3Harris and SpaceX, worth around $193.5 million and just over $149 million, respectively, on Oct. 5, 2020. Each company will be responsible for building four satellites, each with a wide field of view (WFOV) overhead persistent infrared (OPIR) sensor, in support of work on what SDA calls Tranche 0 of the Tracking Layer of the planned overarching early warning constellation. "SDA is developing the low-cost proliferated WFOV space vehicles that provide the missile warning and the tracking information for national defense authorities, as well as tracking and cueing data for missile defense elements," Mark Lewis, the Acting Deputy Undersecretary of Defense for Research and Engineering, said in a [statement to C4ISRNET](https://www.c4isrnet.com/battlefield-tech/space/2020/10/05/space-development-agency-orders-8-hypersonic-weapon-tracking-satellites/).

"This capability [the Tracking Layer] encompasses space-based sensing, as well as algorithms, novel processing schemes, data fusion across sensors and orbital regimes, and tactical data products able to be delivered to the appropriate user," according to SDA's website. This Layer's Tranche 0 could eventually grow to 20 satellites and this portion of the larger constellation may eventually have as many as 200 space-based sensors. SpaceX's satellite will be derived from that company's [Starlink design](https://www.thedrive.com/the-war-zone/32346/the-air-force-and-spacex-are-teaming-up-for-a-massive-live-fire-exercise" \t "_blank), which was originally designed as part of an effort to provide increased access to broadband internet for commercial and military purposes. An as-yet-unknown subcontractor will be providing the OPIR sensor.

L3Harris is developing both its satellite and sensor in-house. The company has not yet released details about the design of either one. SDA's goal is to launch the first Tranche 0 satellites into Low Earth Orbit (LEO) in 2022 and then have moved on to the Tranche 1 stage by 2024, where the Tracking Layer will be able to provide persistent monitoring for missile and hypersonic threats over specific regions of interest. The hope is that there will be enough satellites in orbit by 2026 to provide global early warning coverage. The idea is that the Tracking Layer will also be more responsive, flexible, and resilient to the [ever-more real prospect](https://www.thedrive.com/the-war-zone/35057/space-force-boss-says-russia-has-been-testing-its-killer-satellites-in-orbit) of an enemy anti-satellite attack by using this large, distributed constellation of small satellites. At present, the U.S. military's space-based early warning capability comes from a relatively limited number of larger satellites, such as the Space-Based Infrared System (SBIRS) constellation, which you can read about in more detail [here](https://foxtrotalpha.jalopnik.com/these-are-the-doomsday-satellites-that-detected-the-exp-1737434876). SBIRS notably provided an advance alert that Iranian ballistic missiles [were headed toward bases](https://www.thedrive.com/the-war-zone/31769/satellite-images-show-the-aftermath-of-irans-missile-strikes-on-al-assad-air-base-in-iraq) hosting U.S. troops in Iraq in January, giving those individuals time to seek cover. SBIRS' sensors are also known to be powerful enough to spot infrared events [that are much smaller](https://www.thedrive.com/the-war-zone/27364/u-s-infrared-warning-satellite-data-could-settle-debate-over-pakistan-india-dogfight) than a ballistic missile blasting off, such as the launch of smaller missiles, large explosions, and even artillery fire.

The Tracking Layer isn't the only planned distributed space-based sensor program in the works, either. It's "going to combine with activities in the Missile Defense Agency as they build toward their [Hypersonic and Ballistic Tracking Space Sensor](https://missiledefenseadvocacy.org/defense-systems/hypersonic-and-ballistic-tracking-space-sensor-hbtss/) (HBTSS) medium field of view (MFOV) space vehicles," Acting Deputy Undersecretary of Defense Lewis added in his statement to C4ISRNET

#### Megaconstelaltions are appropriation.

Johnson 20 [Chris, Space Law Advisor for Secure World Foundation, 9 years of professional experience in international space law and policy. J.D. from New York Law School; 2020; “The Legal Status of MegaLEO Constellations and Concerns About Appropriation of Large Swaths of Earth Orbit,” <https://swfound.org/media/206951/johnson2020_referenceworkentry_thelegalstatusofmegaleoconstel.pdf>] brett

Yes, This Is Impermissible Appropriation

Article II of the Outer Space Treaty, discussed above, is clear on the point that the appropriation of outer space, including the appropriation of either void space or of celestial bodies, is an impermissible and prohibited action under international law. No means or methods of possession of outer space will legitimize the appropriation or ownership of outer space, or subsections thereof.

Excludes Others

The constellations above, because they seem to so overwhelmingly possess particular orbits through the use of multiple satellites to occupy orbital planes, and in a manner that precludes other actors from using those exact planes, constitute an appropriation of those orbits. While the access to outer space is nonrivalrous – in the sense that anyone with the technological capacity to launch space objects can therefore explore space – it is also true that orbits closer to Earth are unique, and when any actor utilizes that orbit to such an extent to these proposed constellations will, it means that other actors simply cannot go there.

To allow SpaceX, for example, to so overwhelmingly occupy a number of altitudes with so many of their spacecraft, essentially means that SpaceX will henceforth be the sole owner and user of that orbit (at least until their satellites are removed). No other actors can realistically expect to operate there until that time. No other operator would dare run the risk of possible collision with so many other spacecraft in that orbit. Consequently, the sole occupant will be SpaceX, and if “possession is 9/10th of the law,” then SpaceX appears to be the owner of that orbit.

Done Without Coordination

Additionally, SpaceX and other operators of megaconstellations are doing so without any real international conversation or agreement, which is especially egregious and transgressive of the norms of outer space. Compared to the regime for GSO, as administered by the ITU and national frequency administrators, Low Earth Orbit is essentially ungoverned, and SpaceX and others are attempting to seize this lack of authority to claim entire portions of LEO for itself; and before any international agreement, consensus, or even discussion is had. They are operating on a purely “first come, first served” basis that smacks of unilateralism, if not colonialism.

Governments Are Ultimately Implicated

As we know, under international space law, what a nongovernmental entity does, a State is responsible for. Article VI of the Outer Space Treaty requires that at least one State authorize and supervise its nongovernmental entities and assure their continuing compliance with international law. As such, the prohibition on nonappropriation imposed upon States under Article II of the Outer Space Treaty applies equally to nongovernmental private entities such as SpaceX.

Nevertheless, through the launching and bringing into use of the Starlink constellation, SpaceX will be the sole occupant, and thereby, possessor, both fact and in law, of 550 km, 1100 km, 1130 km, 1275 km, and 1325 km above our planet (or whatever orbits they finally come to occupy). The same is true for the other operators of these large constellations which will be solely occupying entire orbits.

Long-Term Occupation Constitutes Appropriation

These altitudes are additionally significant, as nonfunctional spacecraft in orbits lower than around 500 km will re-enter the Earth’s atmosphere in months or a few years, but the altitudes selected for the Starlink constellation, while technologically desirable for their purposes, also mean that any spacecraft which are not de-orbited from these regions may be there for decades, or possibly even hundreds of years. By comparison, the granting of rights for orbital slots at GSO is in 15-year increments, a length of time much less than what the altitudes of the megaconstellations threaten. Such long spans of time at these altitudes by these megaconstellations further bolster the contention that this occupation rises to the level of appropriation of these orbits.

Prevents Others from Using Space

Article I of the Outer Space Treaty establishes that the exploration and use of outer space is “the province of all mankind.” It further requires that this exploration and use shall be by all States “without discrimination of any kind, on a basis of equality and in accordance with international law...” However, when one private corporation so overwhelmingly possesses entire portions of outer space, their use is discriminatory to other potential users and interferes with their freedom to access, explore, and use outer space. So long as these actors are so dominantly possessing and occupying those orbits, their actions exclude others from using them. What other operator would dare use orbits where there are already hundreds of satellites operating as part of a constellation? It would be an extremely unwise and risky decision to try to share these orbits with a mega constellation, so they will likely choose other altitudes and orbits. This massive occupation of particular orbits effectively defeats others from enjoying the use of outer space. While a State can issue permits for one of its corporations allowing them to launch and operate satellites to this extent, that does not automatically mean that their activities in outer space, an area beyond national sovereignty, are therefore in perfect accordance with the strictures of international law. Indeed, national permissions offer no such guarantee.

No Due Regard for Others

That these megaconstellations violate the prohibition on appropriation in Article II is additionally supported by Article IX of the Outer Space Treaty. Article IX requires that in the exploration and use of outer space, States “shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space... with due regard to the corresponding interests of other States...” There is hardly any way to view this deployment of megaconstellations as showing any type of due regard to the corresponding interests of others. This lack of regard further supports the notion of their unilateral transgressive violations of the purposes of space law norms.

Harmful Contamination

The impacts of the spacecraft on the pressing issue of space debris need not be gone into detail here. Suffice it to say, megaconstellations threaten mega-debris. The failure rate of these comparatively cheap satellites should give pause, because if 5% of a constellation of 100 satellites fails, this is 5 guaranteed new pieces of debris intentionally introduced to the fragile space domain. Article IX of the Outer Space Treaty warns of harmful contamination of the space environment and requires States to take appropriate measures to prevent this harmful contamination. A responsible government could not, in all seriousness, permit the intentional release of such amounts of space debris, especially in the already fraught orbits that many megaconstellations are headed towards. While the threat of space debris is not directly relevant to the accusation of appropriation of outer space, it goes towards the argument that these actors are conducting activities in a manner lacking in regard to others, and in fact, amounts to excluding others from using the space domain. By excluding others, this has the effect of taking orbits for themselves, which IS occupation.

If This Isn’t Appropriation, Then What Is?

Arguing in the alternative, if these megaconstellations — in their dominant occupation of entire orbits in orbital planes with numerous satellites — could be considered (merely for the sake of argument) to not be appropriation, we must therefore ask: what would be appropriation? What use of void space, including orbits of the Earth, would constitute actual appropriation? What further, additional fact of these uses of space, if added to the scenario, would cause that constellation to cross over the line into clearly prohibited appropriation? Perhaps the exact same scenario, but supplemented with an actual, formal claim of sovereignty, issued by a government, is the only element which could be added to megaconstellations which would then cross the threshold into appropriation. However, a formal claim of sovereignty would be merely an act occurring on Earth and would not change any actual facts in the space domain. Consequently, the lack of a formal claim of sovereignty should not be the deciding criteria in arriving at the conclusion that megaconstellations constitute appropriation of orbits.

Conclusion

In conclusion, these megaconstellations effectively occupy entire orbital regions with their vast fleet of spacecraft and in so doing effectively preclude other actors from sharing those domains. They have done so, or are attempting to do so, without any international consensus or discussion, which is most egregious for a domain outside of State sovereignty and which no State can own. Governments will ultimately be responsible for this appropriation, and both are prohibited from appropriating space. In distinction to GSO, their permission to go there means that they could occupy these regions for incredibly long periods — which again shows their appropriation. These constellations significantly prevent others from using those regions, which therefore interferes with others’ right to explore and use space. And ultimately, this reckless ambition shows absolutely no due regard (as per Article IX) for the corresponding rights of others. As such, these megaconstellations constitute an impermissible appropriation of particular regions of outer space, regardless of any formal, official claim of such by a responsible, authorizing government.

#### Absent early detection we lose deterrence – that emboldens rivals

**Beu 21** [Sammantha Beu, 4-2-21, Sensor Tech Key to Effective Missile Defense, <https://www.nationaldefensemagazine.org/articles/2021/4/2/sensor-tech-key-to-effective-missile-defense> [accessed 2-5-22] Lydia

“If you can’t see it, you can’t shoot it. And if you can’t see it, you can’t deter it either,” said Air Force Gen. John Hyten, vice chairman of the Joint Chiefs of Staff. In a recent interview, Hyten discussed the way forward for integrated air-and-missile defense, saying the key to missile defeat and defense is “the sensory capability that can track that missile.” This sentiment has been echoed by other leaders. During her Senate confirmation, Deputy Secretary of Defense Kathleen Hicks was asked about her priorities, replying: “I would assess ongoing efforts to improve national missile defense, with a particular focus on improving discrimination capabilities and sensors for detection of both ballistic and hypersonic missiles.” The Defense Department has already worked to upgrade interceptor capabilities. After scrapping the Redesigned Kill Vehicle program, the Missile Defense Agency began pursuing the Next-Generation Interceptor, expected to roll out within the next decade. The interceptor will enhance the Ground-based Midcourse Defense system based in California and Alaska, but a 10-year gap in capability presents a risk. With growing concerns about potential threats, lawmakers are pushing for an additional layer of defense. Per the fiscal year 2021 National Defense Authorization Act, Congress has tasked the Pentagon to deliver 20 new interim ground-based interceptors capable of protecting the homeland. According to the bill, the interim interceptors should “address the majority of current and near- to mid-term projected ballistic missile threats to the United States homeland from rogue nations.” North Korea and Iran remain a threat to America and its allies, so the United States must be well-equipped to defend against long-range weapons. But what about efforts to advance sensor technologies? Also noted in the NDAA were lawmakers’ concerns regarding the lack of budgeting for key programs to improve overall sensor architecture, including the Homeland Defense Radar-Hawaii and AN/TPY-2, as well as the development and deployment of the hypersonic and ballistic tracking space sensor. Senior “military and civilian officials have stated repeatedly that space-based sensors are the most effective path to improving both homeland and theater missile defenses against a wide range of missile threats,” states the NDAA. Those agreeing include Indo-Pacific Command, which just laid out its investment priorities for the new Pacific Deterrence Initiative. Included in the report — written by PACOM Commander Adm. Philip Davidson — was a request of $2.3 billion for “a constellation of space-based radars.” Sensors are the eyes and ears of missile defense and are critical for detecting and tracking missiles through all phases of their trajectory, either by space-based satellites or by land- and sea-based radars. Some sensors, such as early warning radar and X-band radar, have discrimination capabilities to distinguish whether an incoming object actually poses a threat, is simply debris, or perhaps is a deliberate countermeasure. As it faces the evolving threat of hypersonic missiles and maneuvering reentry vehicles, the U.S. defense industry is working to meet the challenge, with Northrop Grumman and L3Harris selected in January to build prototypes for the HBTSS space-based sensor. Lockheed Martin, Boeing and Raytheon have also won past contracts with the Missile Defense Agency to develop hypersonic missile defense systems. Dr. Mark Lewis, executive director of NDIA’s new Emerging Technologies Institute, and the immediate past director of defense research and engineering and acting deputy undersecretary in charge of technology modernization, said hypersonic weapons will add a new level of complexity to missile defense. “Hypersonic systems don’t just introduce speed; they bring a combination of speed, maneuverability, range and altitude that makes timely detecting, tracking and defeating particularly difficult. That’s why the United States is pursuing such weapons; it’s also why our peer competitors are doing the same,” he said. Lewis has observed that success requires more than just spotting and identifying a hypersonic weapon, but also retaining custody until it can be rendered ineffective. “These systems can be stopped but doing so will require leveraging state-of-the-art space sensors, rapid processing and decision-making, and an assortment of available intercept techniques.” The question is whether the Pentagon considers sensor innovation a priority, as the allocation of funding per the fiscal year 2021 budget request has fallen short. Hypersonic defense is clearly lagging when compared with hypersonic strike capabilities. If the United States wants to outpace competitors like Russia and China, an enhanced and integrated sensor architecture for ballistic and hypersonic defense is a necessary investment. Improving sensors can also enable other technologies. Laser weapon systems use directed energy to deter and even neutralize their targets, and they heavily rely on robust sensor technology for tracking and beam control. Working as a complement to more conventional systems, high-energy lasers can serve as an additional line of defense against missile threats. The bottom line is, the earlier an incoming missile can be detected, the more time there is to react. Sensors are the first line of defense in the kill chain, and without them, the rest of the system cannot operate. The Defense Department should partner with industry and lawmakers to prioritize and bolster sensor capabilities and ensure the effectiveness of missile defense systems against emerging threats.

#### No link turns -- Lack of defense causes regional instability and triggers first strikes – Nuke war.

Reny 20 [Stephen Reny, Former Airforce Fellow, 2020, "Nuclear-Armed Hypersonic Weapons and Nuclear Deterrence on JSTOR," No Publication, <https://www.jstor.org/stable/26956152> [accessed 2-5-22] Lydia

A period of increased instability will occur during the phase in which nuclear hypersonics become operational. This turbulence will peak as one nuclear country deploys hypersonic weapons while others are still in developmental stages. Once this occurs, nuclear powers without hypersonic capability will perceive a disadvantage and be more vulnerable to a strike from the nation with the defense-penetrating capability. During this time, the disadvantaged power will contemplate and recalculate its options, deciding whether a first strike is warranted because of its perceived vulnerability. As Thomas Schelling stated, “Vulnerable strategic weapons not only invite attack but in a crisis could coerce the . . . government into attacking when it might prefer to wait.”73 Therefore, until opposing powers share the same vulnerabilities and/or comply with Wohlstetter’s stability criteria, the mismatch in nuclear attributes will promote instability. Additionally, when competing countries possess ballistic missile defenses and no defensepenetrating capabilities (table 4, situation B), instability will rumble through the nuclear deterrent paradigm: assured vulnerability is completely undermined with neither country convinced it could launch a credible counterstrike. Therefore, as a counter to ballistic missile defenses, hypersonic weapons are a natural evolution in nuclear deterrent systems; they should be anticipated and expected to bring back true assured vulnerability. The danger lies during the transition to assured vulnerability and should be managed in a manner that minimizes risk from the absence of BMD and hypersonics.

## Case

## Underview

#### Permissibility and presumption negate

#### 1] Obligations- the resolution indicates the affirmative has to prove an obligation, and permissibility would deny the existence of an obligation

#### 2] Falsity- Statements are more often false than true because proving one part of the statement false disproves the entire statement. Presuming all statements are true creates contradictions which would be ethically bankrupt.

#### 3] Negating is harder – A] Aff gets first and last speech which control the direction of the debate B] Affirmatives can strategically uplayer in the 1ar giving them a 7-6 time skew advantage, splitting the 2nr C] They get infinite prep time

#### 4] Affirmation theory- Affirming requires unconditionally maintaining an obligation

Affirm [is to]: maintain as true.

That’s Dictionary.com- “affirm” <https://www.dictionary.com/browse/affirm>

Yes 2n thoery

#### Shiftiness – They can change their entire advocacy in the 1ar and I can’t do anything about it. Shiftiness comes first and outweighs because it controls the internal link to nuanced clash – anything else means I have to restart every speech.

#### Infinite Abuse – No 2N Theory means they can be infinitely abusive in the 1AR without a check.

afc

#### CI- we’ll defend the violation

#### Breadth of education- allows us to have nuanced discussion of framework and contention with depth as well- aff having 2 speeches and the last word means they can overcome timeskew, and solves depth because the 2nr and 2ar both have to collapse- this means breadth comes first because it’s not mutually exclusive with depth, but your interp limits breadth which our CI solves

#### Also outweighs on impact probability- unfairness can be overcome, but prevention of a framework debate can’t produce phil ed

#### Reciprocity- it means you get at least one args guaranteed but I don’t because you can still contest both which is by definition irreciprocal- reciprocity controls the IL to fairness since its very premise is predicated on equitable access to competition which means we hijack your offense

#### On 1 layer vote aff – no

No u iniitated multiple layers

1ar thoery checks, no strucural skew

#### On spec

#### : Drop them for reading a spec shell:

#### Infinite regress- there are an infinite number of things I can specify – they’ll say it’s core to the the topic lit but that’s an empirical claim without an empirical warrant

#### Predictability- it is impossible for me to know what you want me to spec in the aff which means I’ll always violate.

#### Clash – they force me to clog up the 1AC with specifications rather than offense. Clash outweighs because its intrinsic to debate and intrinsicness outweighs because its binding.

#### On reasonabilty

#### And rvis

## Framing

### Practical reason fails

#### You conflates reason as a normative justification for action as opposed to a regular motivation for action – even if we ask why it does not establish normative authority but why we are motivated to follow that action

#### Schmagency – agency is escapable since we can opt out of it – individuals can just choose to opt out of the game of agency

#### Disinterested participant – we can engage in the process of agency but apathetically i.e. I can play chess not bc of the constitutive aim of causing checkmate but because the pieces move in cool ways, which means that agency is not binding

#### No way to verify if everyone has PR

### Internalism fails – motivation is external

#### There is a separation between moral judgments and motivation to follow those judgments – for instance, people steal out of necessity even though they may know that it is morally incorrect – thus only when reasons line up with external circumstances can they be motivating

#### Arbitrariness – the reasons for actions individuals choose vary i.e. I could choose to eat peanut butter out of hunger or boredom, which means that not all reasons are equally motivating for all agents – we need an external source that acts as an objective motivator

#### Even if internalism is true individuals are only motivated by rational self interest – moral principles are chosen out of mutual agreement i.e. when we create a principle that killing is wrong we adopt it out of mutual restraint

### Universality fails non contradiction assumes this

#### Kant triggers permissibility- there’s no brightline for what a “general” maxim so people can tailor their maxims to be more specific, ex. Lying is bad “non-universalizable” but lying to save someones life is universalizable

#### A priori reason is impossible – knowledge is experiential since we cannot gain a concept of a thing or an idea absent an experience of it i.e. no matter how much you describe to me the sun I cannot infer qualities abt it from your definition i.e. its warmth, its brightness, etc

#### I can universalize my respect for myself but don’t have to do it for others – I can universalize our respect from ourselves without having to universalize respect for everyone

## Advantage

#### No space war—interdependence checks.

Bragg et al 18—(principle research scientist at NSI, Inc. Lecturer in polisci @ Texas A&M). , July 2018.. Allison Astorino-Courtois. Robert Elder. Belinda Bragg. “Contested Space Operations, Space Defense, Deterrence, and Warfighting: Summary Findings and Integration Report,” NSI, <https://nsiteam.com/social/wp-content/uploads/2018/11/Space-SMA-Integration-Report-Space-FINAL.pdf>

Everyone needs space While the US may be relatively more dependent on space for national security than are other states, it is far from alone in relying on space. Nuclear armed states are dependent on space for important command and control functions, and major powers are increasingly using space for battlefield situational awareness and communications. China and Russia were identified as having significant (and fairly equal) levels of strategic risk in space (ViTTa Q16), although their regional security priorities and (to date) less spacedependent economies place them at an advantage to the US. They may, therefore, see the strategic risk of conflict is space as lower than does the US. Still, space capabilities remain a source of economic expansion and national pride for both, and their calculations of the cost of conflict involving space may include consideration of these factors. Even now, there is a general consensus that the US and other actors have more to gain from space than they have from the loss of space-based capabilities (ViTTa Q3). This suggests that, although the US is more vulnerable in the space domain than are other states, the likelihood that aggressive action against an adversary’s space assets would be reciprocated may provide a degree of security. It also creates another incentive for actors to use diplomacy and international law to reduce risk and increase transparency in the space domain.

#### Legal norms, empirics, costs.

Pavur and Martinovic 19 [James Pavur, DPhil Researcher Cybersecurity Centre for Doctoral Training Oxford University, Ivan Martinovic, Professor of Computer Science Department of Computer Science Oxford University, “The Cyber-ASAT: On the Impact of Cyber Weapons in Outer Space,” 2019 11th International Conference on Cyber Conflict: Silent Battle, <https://ccdcoe.org/uploads/2019/06/Art_12_The-Cyber-ASAT.pdf>] lr

3. STABILITY IN SPACE Given the uncomfortable combination of high dependency and low survivability, one might expect to observe frequent attacks against critical military assets in orbit. However, despite decades of recurring prophesies of impending space war, no such conflict has broken out [14]–[18]. It is true that a handful of space security crises have occurred; most notably, the 2007 Chinese anti-satellite weapon (ASAT) test and the 2008 US ASAT demonstration in response [19]. Moreover, a recent Centre for Strategic and International Studies report suggests increasing interest in attacking US space assets, particularly among the Chinese, Russian, North Korean and Iranian militaries [20]. Overall, however, the space domain has remained puzzlingly peaceful. In this section, we outline three major contributors to this enduring stability: limited accessibility, attributable norms, and environmental interdependence. A. Limited Accessibility Space is difficult. Over 60 years have passed since the first Sputnik launch and only nine countries (ten including the EU) have orbital launch capabilities. Moreover, a launch programme alone does not guarantee the resources and precision required to operate a meaningful ASAT capability. Given this, one possible reason why space wars have not broken out is simply because only the US has ever had the ability to fight one [21, p. 402], [22, pp. 419–420]. Although launch technology may become cheaper and easier, it is unclear to what extent these advances will be distributed among presently non-spacefaring nations. Limited access to orbit necessarily reduces the scenarios which could plausibly escalate to ASAT usage. Only major conflicts between the handful of states with ‘space club’ membership could be considered possible flashpoints. Even then, the fragility of an attacker’s own space assets creates de-escalatory pressures due to the deterrent effect of retaliation. Since the earliest days of the space race, dominant powers have recognized this dynamic and demonstrated an inclination towards de-escalatory space strategies [23]. B. Attributable Norms There also exists a long-standing normative framework favouring the peaceful use of space. The effectiveness of this regime, centred around the Outer Space Treaty (OST), is highly contentious and many have pointed out its serious legal and political shortcomings [24]–[26]. Nevertheless, this status quo framework has somehow supported over six decades of relative peace in orbit. Over these six decades, norms have become deeply ingrained into the way states describe and perceive space weaponization. This de facto codification was dramatically demonstrated in 2005 when the US found itself on the short end of a 160-1 UN vote after opposing a non-binding resolution on space weaponization. Although states have occasionally pushed the boundaries of these norms, this has typically occurred through incremental legal re-interpretation rather than outright opposition [27]. Even the most notable incidents, such as the 2007-2008 US and Chinese ASAT demonstrations, were couched in rhetoric from both the norm violators and defenders, depicting space as a peaceful global commons [27, p. 56]. Altogether, this suggests that states perceive real costs to breaking this normative tradition and may even moderate their behaviours accordingly. One further factor supporting this norms regime is the high degree of attributability surrounding ASAT weapons. For kinetic ASAT technology, plausible deniability and stealth are essentially impossible. The literally explosive act of launching a rocket cannot evade detection and, if used offensively, retaliation. This imposes high diplomatic costs on ASAT usage and testing, particularly during peacetime. C. Environmental Interdependence A third stabilizing force relates to the orbital debris consequences of ASATs. China’s 2007 ASAT demonstration was the largest debris-generating event in history, as the targeted satellite dissipated into thousands of dangerous debris particles [28, p. 4]. Since debris particles are indiscriminate and unpredictable, they often threaten the attacker’s own space assets [22, p. 420]. This is compounded by Kessler syndrome, a phenomenon whereby orbital debris ‘breeds’ as large pieces of debris collide and disintegrate. As space debris remains in orbit for hundreds of years, the cascade effect of an ASAT attack can constrain the attacker’s long-term use of space [29, pp. 295– 296]. Any state with kinetic ASAT capabilities will likely also operate satellites of its own, and they are necessarily exposed to this collateral damage threat. Space debris thus acts as a strong strategic deterrent to ASAT usage.

#### **Space mining advtange c/a everything above**

## Phil offense

#### 1] Aliens don’t exist

Redd, 18—Space.com contributor, citing Anders Sandberg, philosopher at the University of Oxford (Nolan Taylor, “Alien Life May Be Rare in Our Galaxy Today,” <https://www.space.com/41080-alien-life-may-be-rare-today.html>, brett)

The hunt for E.T. may have gotten more difficult. New research suggests that alien life may not be as widespread as we had hoped. When it comes to hunting for alien civilizations, a key question is **how plentiful** intelligent extraterrestrials are in the universe — but the answer to that question depends on a lot of knowledge scientists **don't have yet**. In 1960, Frank Drake, an astronomer and hunter of extraterrestrial intelligence, devised an equation to calculate the probability of hearing from an intelligent, communicating alien civilization. The Drake equation relies on the values of several constants to determine how widespread such civilizations might be, how likely they are to evolve and how likely they are to have broadcast when we were able to detect. While some of the numbers, such as how many stars have planets around them, are fairly well-known, others, such as the fraction of those worlds with life, remain uncertain. [The Father of SETI: Q&A with Astronomer Frank Drake] Over the years, scientists have attempted to "solve" the Drake equation. But the uncertain quantities required **estimation**. Optimists tended to put in numbers that would reflect their thoughts — life on other planets is plentiful! Civilizations last for millions of years! Pessimists skew their results the other way, assuming life is rare and civilizations quickly burn out. Searching for a more accurate answer to the question 'Are we alone?' the new study's researchers have included **the** uncertainties of the numbers — how confident scientists are in them. Rather than giving each component a hard-and-fast amount, they attempted to gauge the strength of the research into these questions. "We can show that, given current scientific uncertainty, we get a distribution that could make both the optimists and pessimists happy at the same time: a fair chance of several alien civilizations, but also a fair chance of no aliens within the visible universe," Anders Sandberg told Space.com by email. Sandberg, a philosopher at the University of Oxford, is the lead author on the new research. "The uncertain sky should not be surprising given our level of uncertainty," Sandberg said. The study, which is available on the preprint site Arxiv, has been submitted to the journal Royal Society of London A. Alone in the universe? In 1950, Italian-American physicist Enrico Fermi looked to the skies and asked, "Where are they?" If the universe is filled with alien civilizations, why have none of them contacted Earth? The question, referred to as the Fermi paradox, provided the fuel for the Drake equation. The Drake equation has never sought a definite number. Instead, it has been used to make a rough estimate of the number of detectable civilizations in the Milky Way (N). According to the equation, N = RfpncflfifcL That number is based on the rate of star formation per year (R), the fraction of stars with planets (fp), the number of habitable planets per system of planets (nc), the fraction of those planets with life (fl), the fraction of life that is intelligent (fi), the fraction of intelligent civilizations that are detectable (fc), and the average lifetime of such civilizations in years (L). Observations of distant stars, with instruments such as NASA's Kepler telescope, have revealed that planets are plentiful around stars, and habitable worlds are spread across the galaxy. All the other variables remain up in the air. [The Most Intriguing Alien Planet Discoveries of 2017] Sandberg and his colleagues decided to **change the inputs** for the unknown parts of the equation. Rather than estimating a single number, they **included the range**. For instance, saying that there is a 1/100 chance for life to evolve doesn't make it clear whether the odds are exactly 1 out of 100, between 1/1000 and 1/10, or between one and one in a googol (10^100), Sandberg said. "One of the features that differs in [the new research] from previous Fermi paradox analyses is that the current authors tackle the problem of order-of-magnitude uncertainties in each component of Drake's equation in a **less-biased**, **more** robust way," Ian Jordan, an astronomer and engineer at the Space Telescope Science Institute in Baltimore, told Space.com in an email. Jordan is not part of the new research. By factoring in the scientific uncertainty for components like how often life evolves, the researchers determined that the odds that we are the only intelligent life in the Milky Way range between 53 and 99.6 percent. The odds get a bit better when they include the observable universe — the chance that humanity is alone ranges between 39 and 85 percent. The research was published on the journal preprint server arXiv. The new numbers mean there's a good chance humanity is the only **detectable intelligent** civilization around. Sandberg doesn't necessarily think that's a bad thing.

#### 2] squo solves conditional use – companies cant just go into space freely, 1 it gets apporved by governments – ie before u sent megaconstelaltions into the LEO it gets approved by the FCC, 2 regulations solve

3] there are things in outspace – the moon, planet mars, etc, if space cant be aporpriatied then earth cant either

**It negates**

**universality of freedom justifies a libertarian state.**

**OTTESON 9 brackets in original** James R. Otteson (professor of philosophy and economics at Yeshiva University) “Kantian Individualism and Political Libertarianism” The Independent Review, v. 13, n. 3, Winter 2009

In a crucial passage in Metaphysics of Morals, Kant writes that the “Universal Principle of Right” is **“‘[e]very action which by itself or by its maxim enables the freedom of each individual’s will to co-exist with the freedom of everyone else** in accordance with a universal law is right.’” He concludes, “Thus the universal law of right is as follows: let your external actions be such that the free application of your will can co-exist with the freedom of everyone in accordance with a universal law” (1991, 133, emphasis in original).5 This stipulation **becomes** for Kant **the grounding justification for the existence of a state**, its raison d’être, and **the reason we leave the state of nature is to secure this sphere of maximum freedom compatible with the same freedom of all others**. **Because this freedom must be complete**, in the sense of being **as full as possible** given the existence of other persons who demand similar freedom, it entails that **the state may**—indeed, must—**secure this condition** of freedom, **but undertake to do nothing else because any other** state **activities would compromise the very autonomy the state seeks to defend**. Kant’s position thus outlines and implies a political philosophy that is broadly libertarian; that is, it endorses a state constructed with the sole aim of protecting its citizens against invasions of their liberty. For Kant, **individuals create a state to protect their moral agency, and** in doing so **they consent to coercion only insofar as it is required to prevent themselves** or others **from impinging on** their own or **others’ agency**. In his argument, individuals cannot rationally consent to a state that instructs them in morals, coerces virtuous behavior, commands them to trade or not, directs their pursuit of happiness, or forcibly requires them to provide for their own or others’ pursuits of happiness. And except in cases of punishment for wrongdoing,6 this severe limitation on the scope of the state’s authority must always be respected: “The rights of man must be held sacred, however great a sacrifice the ruling power may have to make. There can be no half measures here; it is no use devising hybrid solutions such as a pragmatically conditioned right halfway between right and utility. For all politics must bend the knee before right, although politics may hope in return to arrive, however slowly, at a stage of lasting brilliance” (Perpetual Peace, 1991, 125). The implication is that a Kantian state protects against invasions of freedom and does nothing else; in the absence of invasions or threats of invasions, it is inactive.

#### Thus, the standard is consistency with with a libertarian state of non-interference.

#### And it negates

#### Libertarianism mandates a market-oriented approach to space—that negates

Broker 20 [(Tyler, work has been published in the Gonzaga Law Review, the Albany Law Review and the University of Memphis Law Review.) “Space Law Can Only Be Libertarian Minded,” Above the Law, 1-14-20, <https://abovethelaw.com/2020/01/space-law-can-only-be-libertarian-minded/>] TDI

The impact on human daily life from a transition to the virtually unlimited resource reality of space cannot be overstated. However, when it comes to the law, a minimalist, dare I say libertarian, approach appears as the only applicable system.

In the words of NASA, “2020 promises to be a big year for space exploration.” Yet, as Rand Simberg points out in Reason magazine, it is actually private American investment that is currently moving space exploration to “a pace unseen since the 1960s.” According to Simberg, due to this increase in private investment “We are now on the verge of getting affordable private access to orbit for large masses of payload and people.” The impact of that type of affordable travel into space might sound sensational to some, but in reality the benefits that space can offer are far greater than any benefit currently attributed to any major policy proposal being discussed at the national level. The sheer amount of resources available within our current reach/capabilities simply speaks for itself. However, although those new realities will, as Simberg says, “bring to the fore a lot of ideological issues that up to now were just theoretical,” I believe it will also eliminate many economic and legal distinctions we currently utilize today.

For example, the sheer number of resources we can already obtain in space means that in the rapidly near future, the distinction between a nonpublic good or a public good will be rendered meaningless. In other words, because the resources available within our solar system exist in such quantities, all goods will become nonrivalrous in their consumption and nonexcludable in their distribution. This would mean government engagement in the public provision of a nonpublic good, even at the trivial level, or what Kevin Williamson defines as socialism, is rendered meaningless or impossible. In fact, in space, I fail to see how any government could even try to legally compel collectivism in the way Simberg fears.

Similar to many economic distinctions, however, it appears that many laws, both the good and the bad, will also be rendered meaningless as soon as we begin to utilize the resources within our solar system. For example, if every human being is given access to the resources that allows them to replicate anything anyone else has, or replace anything “taken” from them instantly, what would be the point of theft laws? If you had virtually infinite space in which you can build what we would now call luxurious livable quarters, all without exploiting human labor or fragile Earth ecosystems when you do it, what sense would most property, employment, or commercial law make? Again, this is not a pipe dream, no matter how much our population grows for the next several millennia, the amount of resources within our solar system can sustain such an existence for every human being.

Rather than panicking about the future, we should try embracing it, or at least meaningfully preparing for it. Currently, the Outer Space Treaty, or as some call it “the Magna Carta of Space,” is silent on the issue of whether private individuals or corporate entities can own territory in space. Regardless of whether governments allow it, however, private citizens are currently obtaining the ability to travel there, and if human history is any indicator, private homesteading will follow, flag or no flag. We Americans know this is how a Wild West starts, where most regulation becomes the impractical pipe dream. But again, this would be a Wild West where the exploitation of human labor and fragile Earth ecosystem makes no economic sense, where every single human can be granted access to resources that even the wealthiest among us now would envy, and where innovation and imagination become the only things we would recognize as currency. Only a libertarian-type system, that guarantees basic individual rights to life, liberty, and the pursuit of happiness could be valued and therefore human fidelity to a set of laws made possible, in such an existence.

#### Property rights in space can be consistent with international law

Simberg 12 [(Rand, MSE in technical management from West Coast University, recognized as an expert in space transportation by the Office of Technology Assessment) “Homesteading the Final Frontier A Practical Proposal for Securing Property Rights in Space,” Competitive Enterprise Institute, April 2012, <https://cei.org/wp-content/uploads/2012/04/Rand-Simberg-Homesteading-the-Final-Frontier.pdf>] TDI

But is it true that any recognition of off-planet property claims is de facto a violation of the Outer Space Treaty? Not necessarily. For instance, one could argue that the existence of the Moon Treaty is in and of itself a refutation of the notion that the Outer Space Treaty outlaws private property in space, or else there would be no need for another treaty that essentially explicitly does so. And there is at least one potential loophole that could be exploited by appropriately worded legislation.

There are two key assumptions in the legal argument used by opponents of off-planet property claims: 1) that the recognition by a government would only recognize claims by its own citizens; and 2) that it would defend them by force. That need not necessarily be so. Under the treaty, it would in fact be possible for a government, or group of governments, to recognize the property claims of anyone who met specified conditions, regardless of their citizenship or nationality. Such cooperation would obviate the need for physical force to defend claims. The argument that the treaty permits individual property rights was actually made from the very beginning. In 1969, two years after the treaty went into force, the late distinguished space-law professor, Stephen Gorove, noted that under it, “[A]n individual acting on his own behalf or on behalf of another individual or a private association or an international organization could lawfully appropriate any part of outer space, including the [M]oon and other celestial bodies.”32 This clearly provides support for the concept of individual claims off planet under Article II.