### 1

#### The meta ethic is desire

#### [1] We can’t obtain evidence of goodness without desire – aposteriori knowledge outweighs.

Sayre-McCord 01

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.

How is the argument supposed to go, if not by way of these multiple fallacies? Let us start with the principle of evidence and the analogy Mill draws between visibility and desirability. What is the analogy supposed to be if not one that commits Mill to interpreting "desirable" as "capable of being desired"? 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.27 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.** 28 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.29 Accordingly, a person who desires x is a person who ipso facto sees x as desirable.30 Desiring something, for Mill, is a matter of seeing it under the guise of the good.31 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.32 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. 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. 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.33 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').34 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).35 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 **experience**s, 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."36

#### [2] Pleasure and pain are intrinsic value and disvalue – everything else regresses. Evolutionary knowledge is reliable – broad consensus and robust neuroscience prove.

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

#### The standard is maximizing wellbeing.

#### [3] Extinction first –

#### a – Moral uncertainty – if we’re unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it

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

#### [4] TJFs – Prefer util –

#### Ground – theres a roughly equal division of ground on both sides. Plan and counterplan solvency advocates prove. Other frameworks are unidirectional – kills engagement on link and impact debates.

#### Topic ed. Most articles about space are written through util – means other frameworks can never engage with the core questions of the literature which decks predictability.

### 2

#### US heg is strong now, but Russia and China are gaining.

Hunt 17 [Edward Hunt, () "The American Empire Isn’t In Decline" Jacobin, 3-13-2017, https://www.jacobinmag.com/2017/03/obama-trump-mattis-united-states-empire/, DOA:9-15-2017 // WWBW]

Some insist that the answer is yes — that the period of US global dominance that has reigned since the end of the Cold War is coming to an end. As things now stand, “the post–Cold War, unipolar moment has passed,” the National Intelligence Council [reported](https://www.dni.gov/files/images/globalTrends/documents/GT-Full-Report.pdf) earlier this year. Former CIA officials John E. McLaughlin and Gen. David H. Petraeus [made](https://armedservices.house.gov/legislation/hearings/full-committee-hearing-state-world-national-security-threats-and-challenges) a similar assessment before the House Armed Services Committee this past February. In the years ahead, McLaughlin argued, “the world will be without a hegemonic power — that is, without a country so powerful as to exert dominant influence and advance policy with little reference to others.” Petraeus agreed, saying that the post–Cold War era of “US domination of the world” is ending. Still, there are some reasons to think otherwise. As former US diplomat R. Nicholas Burns recently [observed](http://www.armed-services.senate.gov/hearings/16-07-07-north-atlantic-treaty_organization-russia-and-european-security), the United States maintains “alliances in Europe and Asia, and the Russians and Chinese do not.” In addition, the American military has begun to [wipe out](https://lobelog.com/the-new-exterminatory-warfare/) ISIS, killing more than [sixty thousand](http://www.military.com/daily-news/2017/02/14/specops-commander-60000-isis-fighters-killed-by-us-troops.html) fighters over the past two and a half years. So do a resurgent Russia, an ascendant China, and the emergence of the Islamic State suggest that US power is ebbing, or are these challenges exaggerated? What do US officials really think about these matters? If we take stock of their public statements as a whole, the foreign policy establishment certainly appears concerned about the latest challenges to US empire, especially the uncertainty that Trump’s election has introduced. But they also remain quite confident in their power to shape the world and steer the United States into a new age of global hegemony. Over the past few years, a number of high-level officials have expressed great confidence in the durability of US hegemony. Not only have they insisted that the declinist thesis is wrong, but they have argued that the United States will remain the world’s dominant power well into the future. In May 2016, two former high-level officials [laid out](https://www.foreign.senate.gov/hearings/examining-americas-role-in-the-world-051216) the more confident view for the Senate Committee on Foreign Relations. In a statement to the panel, former Secretary of State James Baker said that the United States would continue to lead the international system. Certainly, “much of the rest of the world — countries like China, Brazil and India — are catching up with us,” Baker conceded. “Still, we should remain the world’s preeminent leader for the foreseeable future.” Former National Security Advisor Thomas Donilon agreed. As long as the United States takes the proper precautions, he said, it “will continue to be the world’s leading and most powerful nation for a long time to come.” Donilon also rejected the declinist thesis, calling it a “myth” that should not be taken seriously: “The idea that America is in decline does not stand up to a rigorous analysis of our national balance sheet of strategic assets and liabilities,” Donilon asserted. “The truth is that no nation can match our comprehensive set of enduring strengths.” Other Obama administration officials offered similar views. Last October, for example, Secretary of State John Kerry noted that the United States maintains tremendous economic advantages. “We’re the richest country on the face of the planet,” Kerry [said](https://2009-2017.state.gov/secretary/remarks/2016/10/263891.htm). In fact, the Obama administration made great strides in expanding US economic power across the globe. President Obama, who [acknowledged](https://obamawhitehouse.archives.gov/the-press-office/2016/11/20/press-conference-president-obama-lima-peru) during his final months in office that he had “made it a priority to open up new markets overseas,” boasted that his administration had “increased US exports to the world by more than 40 percent — to record levels.” At the same time, administration officials also pointed to their other great advantage in world affairs: American military power. As Secretary of Defense Ashton Carter [noted](http://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=5610) in April 2015, “it will take decades — and let me repeat that: decades — for anyone to build the kind of military capability the United States possesses today.” Obama expressed similar sentiments during his farewell tour. The United States possesses “the greatest military in the history of the world,” Obama [declared](https://obamawhitehouse.archives.gov/the-press-office/2017/01/04/remarks-president-armed-forces-full-honor-review-farewell-ceremony). “Make no mistake,” he continued, “even with the challenges of recent years — and there have been challenges — our allies and adversaries alike understand America’s military remains, by far, the most capable fighting force on the face of the Earth.” In short, contrary to those who warn of waning US hegemony, high-ranking officials insist that the United States remains the most powerful country in the world. “We are, without a doubt, the world’s superpower,” CIA Director John Brennan [said](https://csis-prod.s3.amazonaws.com/s3fs-public/160914_Brennan_Keynote.pdf) this past September. Of course, every great power faces challengers. Not even the mighty United States is immune from pushback. As Carter [noted](https://www.defense.gov/News/Transcripts/Transcript-View/Article/1003751/remarks-by-secretary-carter-in-an-interview-forum-hosted-by-the-atlantic-and-17) last November, the United States faces enemies that are “extremely competitive,” ranging from terrorists to “high-end opponents.” Facing such a broad range of adversaries, foreign policy elites have tried to assess how seriously to treat each, weighing whether current and potential enemies can significantly weaken the United States’ hold over the world. For the most part, they agree on the issue of terrorism. Although American leaders regularly denounce terrorism as the modern world’s greatest plague, most don’t see it as a major challenge. Last November, former State Department official Daniel Serwer [warned](https://2009-2017-fpc.state.gov/264203.htm), “We shouldn’t blow up terrorism into an existential threat. It’s not.” A month later, Obama agreed that ISIS and other groups stand no real chance of defeating the United States. “Today’s terrorists can kill innocent people,” Obama [stated](https://obamawhitehouse.archives.gov/the-press-office/2016/12/06/remarks-president-administrations-approach-counterterrorism), “but they don’t pose an existential threat to our nation.” Instead, officials have grown more concerned about other challenges. Taking a more traditional view of the world, they have largely concluded that rising powers in the international system now pose the most serious threat to US hegemony. Early last year, Carter [articulated](http://www.armed-services.senate.gov/hearings/16-03-17-department-of-defense-budget-posture) this basic rationale, describing the latest trends as “a return, in some ways, to great power competition.” Without diminishing the US’s capacity to fight terrorism, he contended that the nation should prepare for new confrontations with Russia and China. These countries, he argued, “are our most stressing competitors, as they’ve both developed and are continuing to advance military systems that threaten our advantages in specific areas.”

#### Space is crucial to US heg – China is beating the DoD now but commercial companies cement US advantage. Pullback greenlights Chinese dominance across the board

Autry and Kwast 19 Greg Autry and Steve Kwast 8-22-2019 "America Is Losing the Second Space Race to China" (Greg Autry, a clinical professor of space leadership, policy, and business at Arizona State University’s Thunderbird School of Global Management, and Steve Kwast)//Elmer

America Is Losing the Second Space Race to China The private sector can give the United States a much-needed rocket boost. The current U.S. space defense strategy is inadequate and on a path to failure. President Donald Trump’s vision for a Space Force is big enough. As he said on June 18, “It is not enough to merely have an American presence in space. We must have American dominance in space.” But the Air Force is not matching this vision. Instead, the leadership is currently focused on incremental improvements to existing equipment and organizational structures. Dominating the vast and dynamic environment of space will require revolutionary capabilities and resources far deeper than traditional Department of Defense thinking can fund, manage, or even conceive of. Success depends on a much more active partnership with the commercial space industry— and its disruptive capabilities. U.S. military space planners are preparing to repeat a conflict they imagined back in the 1980s, which never actually occurred, against a vanished Soviet empire. Meanwhile, China is executing a winning strategy in the world of today. It is burning hard toward domination of the future space markets that will define the next century. They are planning infrastructure in space that will control 21st-century telecommunications, energy, transportation, and manufacturing. In doing so, they will acquire trillion-dollar revenues as well as the deep capabilities that come from continuous operational experience in space. This will deliver space dominance and global hegemony to China’s authoritarian rulers. Despite the fact that many in the policy and intelligence communities understand exactly what China is doing and have been trying to alert leadership, Air Force leadership has convinced the White House to fund only a slightly better satellite command with the same leadership, while sticking a new label onto their outmoded thinking. A U.S. Space Force or Corps with a satellite command will never fulfill Trump’s call to dominate space. Air Force leadership is demonstrating the same hubris that Gen. George Custer used in convincing Congress, over President Ulysses S. Grant’s better experience intuition, that he could overtake the Black Hills with repeating rifles and artillery. That strategy of technological overconfidence inflamed conflict rather than subduing it, and the 7th Cavalry were wiped out at the Battle of the Little Bighorn. The West was actually won by the settlers, ranchers, miners, and railroad barons who were able to convert the wealth of the territory itself into the means of holding it. They laid the groundwork that made the 20th century the American Century and delivered freedom to millions of people in Europe and Asia. Of course, they also trampled the indigenous people of the American West in their wake—but empty space comes with no such bloody cost. The very emptiness and wealth of this new, if not quite final, frontier, however, means that competition for resources and strategic locations in cislunar space (between the Earth and moon) will be intense over the next two decades. The outcome of this competition will determine the fate of humanity in the next century. China’s impending dominance will neutralize U.S. geopolitical power by allowing Beijing to control global information flows from the high ground of space. Imagine a school in Bolivia or a farmer in Kenya choosing between paying for a U.S. satellite internet or image provider or receiving those services for free as a “gift of the Chinese people.” It will be of little concern to global consumers that the news they receive is slanted or that searches for “free speech” link to articles about corruption in Western democracies. Nor will they care if concentration camps in Tibet and the Uighur areas of western China are obscured, or if U.S. military action is presented as tyranny and Chinese expansion is described as peacekeeping or liberation. China’s aggressive investment in space solar power will allow it to provide cheap, clean power to the world, displacing U.S. energy firms while placing a second yoke around the developing world. Significantly, such orbital power stations have dual use potential and, if properly designed, could serve as powerful offensive weapons platforms. China’s first step in this process is to conquer the growing small space launch market. Beijing is providing nominally commercial firms with government-manufactured, mobile intercontinental ballistic missiles they can use to dump launch services on the market below cost. These start-ups are already undercutting U.S. pricing by 80 percent. Based on its previous success in using dumping to take out U.S. developed industries such as solar power modules and drones, China will quickly move upstream to attack the leading U.S. launch providers and secure a global commercial monopoly. Owning the launch market will give them an unsurmountable advantage against U.S. competitors in satellite internet, imaging, and power. The United States can still build a strategy to win. At this moment, it holds the competitive advantage in every critical space technology and has the finest set of commercial space firms in the world. It has pockets of innovative military thinkers within groups like the Defense Innovation Unit, under Mike Griffin, the Pentagon’s top research and development official. If the United States simply protects the intellectual property its creative minds unleash and defend its truly free markets from strategic mercantilist attack, it will not lose this new space race. The United States has done this before. It beat Germany to the nuclear bomb, it beat the Soviet Union to the nuclear triad, and it won the first space race. None of those victories was achieved by embracing the existing bureaucracy. Each of them depended on the president of the day following the only proven path to victory in a technological domain: establish a small team with a positively disruptive mindset and empower that team to investigate a wide range of new concepts, work with emerging technologies, and test innovative strategies. Today that means giving a dedicated Space Force the freedom to easily partner with commercial firms and leverage the private capital in building sustainable infrastructure that actually reduces the likelihood of conflict while securing a better economic future for the nation and the world.

#### Heg solves every threat – collapse means return to spheres of influence and great power rivalry

Ikenberry 20 John Ikenberry 6-9-2020 “The Next Liberal Order: The Age of Contagion Demands More Internationalism, Not Less” <https://www.foreignaffairs.com/articles/united-states/2020-06-09/next-liberal-order> (Albert G. Milbank Professor of Politics and International Affairs at Princeton University and Global Eminence Scholar at Kyung Hee University, in South Korea)//Elmer

The rivalry between the United States and China will preoccupy the world for decades, and the problems of anarchy cannot be wished away. But for the United States and its partners, a far greater challenge lies in what might be called “the problems of modernity”: the deep, worldwide transformations unleashed by the forces of science, technology, and industrialism, or what the sociologist Ernest Gellner once described as a “tidal wave” pushing and pulling modern societies into an increasingly complex and interconnected world system. Washington and its partners are threatened less by rival great powers than by emergent, interconnected, and cascading transnational dangers. Climate change, pandemic diseases, financial crises, failed states, nuclear proliferation—all reverberate far beyond any individual country. So do the effects of automation and global production chains on capitalist societies, the dangers of the coming revolution in artificial intelligence, and other, as-yet-unimagined upheavals. The coronavirus is the poster child of these transnational dangers: it does not respect borders, and one cannot hide from it or defeat it in war. Countries facing a global outbreak are only as safe as the least safe among them. For better or worse, the United States and the rest of the world are in it together. Past American leaders understood that the global problems of modernity called for a global solution and set about building a worldwide network of alliances and multilateral institutions. But for many observers, the result of these efforts—the liberal international order—has been a failure. For some, it is tied to the neoliberal policies that produced financial crises and rising economic inequality; for others, it evokes disastrous military interventions and endless wars. The bet that China would integrate as a “responsible stakeholder” into a U.S.-led liberal order is widely seen to have failed, too. Little wonder that the liberal vision has lost its appeal. Liberal internationalists need to acknowledge these missteps and failures. Under the auspices of the liberal international order, the United States has intervened too much, regulated too little, and delivered less than it promised. But what do its detractors have to offer? Despite its faults, no other organizing principle currently under debate comes close to liberal internationalism in making the case for a decent and cooperative world order that encourages the enlightened pursuit of national interests. Ironically, the critics’ complaints make sense only within a system that embraces self-determination, individual rights, economic security, and the rule of law—the very cornerstones of liberal internationalism. The current order may not have realized these principles across the board, but flaws and failures are inherent in all political orders. What is unique about the postwar liberal order is its capacity for self-correction. Even a deeply flawed liberal system provides the institutions through which it can be brought closer to its founding ideals. However serious the liberal order’s shortcomings may be, they pale in comparison to its achievements. Over seven decades, it has lifted more boats—manifest in economic growth and rising incomes—than any other order in world history. It provided a framework for struggling industrial societies in Europe and elsewhere to transform themselves into modern social democracies. Japan and West Germany were integrated into a common security community and went on to fashion distinctive national identities as peaceful great powers. Western Europe subdued old hatreds and launched a grand project of union. European colonial rule in Africa and Asia largely came to an end. The G-7 system of cooperation among Japan, Europe, and North America fostered growth and managed a sequence of trade and financial crises. Beginning in the 1980s, countries across East Asia, Latin America, and eastern Europe opened up their political and economic systems and joined the broader order. The United States experienced its greatest successes as a world power, culminating in the peaceful end to the Cold War, and countries around the globe wanted more, not less, U.S. leadership. This is not an order that one should eagerly escort off the stage. Any alternative is worse and causes great power war. The major alternatives to a modernized world order supported by the United States appear unlikely, unappealing, or both. A Chinese-led order, for example, would be an illiberal one, characterized by authoritarian domestic political systems and statist economies that place a premium on maintaining domestic stability. There would be a return to spheres of influence, with China attempting to domi-nate its region, likely resulting in clashes with other regional powers, such as India, Japan, and Vietnam, which would probably build up their conventional or even nuclear forces. A new democratic, rules-based order fashioned and led by medium powers in Europe and Asia, as well as Canada, however attractive a concept, would simply lack the military capacity and domestic political will to get very far. A more likely alternative is a world with little order—a world of deeper disarray. Protectionism, nationalism, and populism would gain, and democracy would lose. Conflict within and across borders would become more common, and rivalry between great powers would increase. Cooperation on global challenges would be all but precluded. If this picture sounds familiar, that is because it increasingly corresponds to the world of today. The deterioration of a world order can set in motion trends that spell catastrophe. World War I broke out some 60 years after the Concert of Europe had for all intents and purposes broken down in Crimea. What we are seeing today resembles the mid-nineteenth century in important ways: the post– World War II, post–Cold War order cannot be restored, but the world is not yet on the edge of a systemic crisis. Now is the time to make sure one never materializes, be it from a breakdown in U.S.-Chinese relations, a clash with Russia, a conflagration in the Middle East, or the cumulative effects of climate change. The good news is that it is far from inevitable that the world will eventually arrive at a catastrophe; the bad news is that it is far from certain that it will not.

#### US-China war goes nuclear

[Caitlin Talmadge (10-15-2018), PhD in Political Science from MIT, BA in Government from Harvard, Professor of Security Studies at Georgetown University, “Beijing’s Nuclear Option,” Foreign Affairs, [https://www.foreignaffairs.com/articles/china/2018-10-15/beijings-nuclear-option]//recut](https://www.foreignaffairs.com/articles/china/2018-10-15/beijings-nuclear-option%5d//recut) CHS PK

As China’s power has grown in recent years, so, too, has the risk of war with the United States. Under President Xi Jinping, China has increased its political and economic pressure on Taiwan and built military installations on coral reefs in the South China Sea, fueling Washington’s fears that Chinese expansionism will threaten U.S. allies and influence in the region. U.S. destroyers have transited the Taiwan Strait, to loud protests from Beijing. American policymakers have wondered aloud whether they should send an aircraft carrier through the strait as well. Chinese fighter jets have intercepted U.S. aircraft in the skies above the South China Sea. Meanwhile, U.S. President Donald Trump has brought long-simmering economic disputes to a rolling boil. A war between the two countries remains unlikely, but the prospect of a military confrontation—resulting, for example, from a Chinese campaign against Taiwan—no longer seems as implausible as it once did. And the odds of such a confrontation going nuclear are higher than most policymakers and analysts think. Members of China’s strategic community tend to dismiss such concerns. Likewise, U.S. studies of a potential war with China often exclude nuclear weapons from the analysis entirely, treating them as basically irrelevant to the course of a conflict. Asked about the issue in 2015, Dennis Blair, the former commander of U.S. forces in the Indo-Pacific, estimated the likelihood of a U.S.-Chinese nuclear crisis as “somewhere between nil and zero.” This assurance is misguided. If deployed against China, the Pentagon’s preferred style of conventional warfare would be a potential recipe for nuclear escalation. Since the end of the Cold War, the United States’ signature approach to war has been simple: punch deep into enemy territory in order to rapidly knock out the opponent’s key military assets at minimal cost. But the Pentagon developed this formula in wars against Afghanistan, Iraq, Libya, and Serbia, none of which was a nuclear power. China, by contrast, not only has nuclear weapons; it has also intermingled them with its conventional military forces, making it difficult to attack one without attacking the other. This means that a major U.S. military campaign targeting China’s conventional forces would likely also threaten its nuclear arsenal. Faced with such a threat, Chinese leaders could decide to use their nuclear weapons while they were still able to. As U.S. and Chinese leaders navigate a relationship fraught with mutual suspicion, they must come to grips with the fact that a conventional war could skid into a nuclear confrontation. Although this risk is not high in absolute terms, its consequences for the region and the world would be devastating. As long as the United States and China continue to pursue their current grand strategies, the risk is likely to endure. This means that leaders on both sides should dispense with the illusion that they can easily fight a limited war. They should focus instead on managing or resolving the political, economic, and military tensions that might lead to a conflict in the first place.

### Fw/Underview

#### Overview to every spike is that these are predicated on affirming is harder arguments so if we win negating is harder then the spikes should flip in our favor, Negating is harder a) Aff gets infinite prep to script 1ar’s to perfection, b) 2ar spin gets judge psych adv even if youre behind on the line by line c) 1ar uplayering ability splitting the 2nr. Preempt to the 1ar – nc reactivity doesn’t apply to underviews since it wasn’t disclosed and 2nr sandbagging isn’t possible with 1ar layering

#### Grant neg new 2NR responses to AC spikes and theory arguments: a) the implication is unknown until the 1AR so they aren’t actually arguments b) strat skew – 1AR extrapolations are devastating to destroy every neg route to the ballot c) forcing the neg to answer every spike in the NC is impossible and I can’t make other arguments, means every round gets wasted on theory

#### Reject spikes – it incentivizes them to blip out 1000 theory arguments so that the NC concedes one which kills topic education which ow because we only have 2 months to debate the topic but theory norms can be set whenever.

#### Grant Rvis on spikes -answering 1000 of these little spikes means we lose time that the 1nc should be using to develop carded offense which means that these arguments should not be no risk issues for them.

#### Use a comparative worlds paradigm where the Affirmative must prove the plan is better than the status quo or a competitive policy option.

#### ‘Resolved’ preceding a colon indicates a legislative forum.

Blanche Ellsworth 81, English professor at SFSU and M.A. in English from UC Berkeley, 1/1/1981, *English Simplified*, 4th Edition, cc

A colon is also used to separate 3. THE SALUTATION OF A BUSINESS LETTER FROM THE BODY, Dear Sir Dear Ms. Weiner NOTE: In an informal letter, a comma follows the salutation: Dear Mary, Dear Uncle Jack 4. PARTS OF TITLES, REFERENCES, AND NUMERALS. TITLE: Principles of Mathematics: An Introduction REFERENCE: Luke 3:4—13 NUMERALS: 8:15 PM 5. PLACE OF PUBLICATION FROM PUBLISHER Indianapolis: Bobbs-Merrill 6. THE WORD RESOLVED FROM THE STATEMENT OF THE RESOLUTION. Resolved: That this committee go on record as favoring new legislation.

#### Ought means should

Merriam Webster, No Date – Merriam Webster’s Learner’s Dictionary, “ought”, <http://www.learnersdictionary.com/definition/ought>  
ought /ˈɑːt/ verb  
Learner's definition of OUGHT [modal verb] 1 ◊ Ought is almost always followed by to and the infinitive form of a verb. The phrase ought to has the same meaning as should and is used in the same ways, but it is less common and somewhat more formal. The negative forms ought not and oughtn't are often used without a following to. — used to indicate what is expected They ought to be here by now. You ought to be able to read this book. There ought to be a gas station on the way. 2 — used to say or suggest what should be done You ought to get some rest. That leak ought to be fixed. You ought to do your homework.

**Prefer our definitions – affirm and negate aren’t words in the resolution, and they don’t even appear on the ballot**

#### Net benefits:

#### Topic Education – Truth-testing moots topic education because it allows debaters to recycle generic arguments which deny the truth of everything. Outweighs other forms of education – we only have 2 months to debate the topic and can have discussions about other issues out of round.

#### Reciprocal burdens – proving a deductive argument is false only requires you win defense against one premise and proving an inductive argument is false is easier because of status quo bias. Comparative worlds solves because it eschews the idea that either side unilaterally carries the burden of proof, and requires both debaters to give an account of why their world is more desirable.

### Case

#### Mining fails and can’t efficiently establish an earth-bound market that allows for solvency of their impacts – empirics ow

**Abrahamian 19** Abrahamian, A. A. (2019, June 26). *How the asteroid-mining bubble burst*. MIT Technology Review. <https://www.technologyreview.com/2019/06/26/134510/asteroid-mining-bubble-burst-history/> (MIT Technology review attempts to bring about better-informed and more conscious decisions about technology through authoritative, influential, and trustworthy journalism.) //Aadit

It was sci-fi come to life—and everybody loved it.

“Space mining could become a real thing!” headlines squealed. A[mazon CEO Jeff Bezos](https://www.technologyreview.com/silicon-valley/amazon/) began speaking of a future in which all heavy industry took place not on Earth, but above it. NASA funded asteroid-mining research; the Colorado School of Mines offered an asteroid-mining degree program; Senator Ted Cruz predicted that Earth’s first trillionaire would be made in space.

“There was a lot of excitement and tangible feeling around all of these things that we’ve been dreaming about,” says Chad Anderson (no relation to Eric), the CEO of [Space Angels](https://www.spaceangels.com/), a venture capital fund that invests in space-related companies.

Also crucial to the money-making opportunities was the burgeoning commercial space sector’s lobbying, which shepherded the SPACE Act through Congress in 2015. This not--uncontroversial bill included a “finders, keepers” rule whereby private American companies would have all rights to the bounty they extracted from celestial bodies, no questions asked. (Before that, property rights and mining concessions in space, which belongs to no country, were not a given.)

That, in turn, would make it possible to work toward a goal that Eric Anderson predicted could be reached by the mid-2020s: extracting ice from asteroids near Earth and selling it in space as a propellant for other missions. Water can be broken into hydrogen and oxygen to make combustible fuel, or—as in DSI’s technology—just heated up and expelled as a jet of steam.

“Both companies believed one of the early products would be propellant itself—that is, water,” says Grant Bonin, the former chief technology officer of Deep Space Industries. “What DSI had been doing is developing propulsion systems to run on water. And everyone who buys one is creating an ecosystem of users now that can be fueled by resources of the future.”

By the spring of 2017, Planetary Resources was operating a lab in a warehouse in Redmond, Washington, decorated with NASA paraphernalia and vintage pinball machines. Engineers tinkered with small cube satellites behind thick glass walls, crafting plans to launch prospecting machines. Luxembourg had given the company a multimillion-dollar grant to open a European office. Japan, Scotland, and the United Arab Emirates announced their own asteroid-mining laws or investments.

The stars had burned through their red tape. The heavens were ready for Silicon Valley.

Then things started going south. Last summer, Planetary failed to raise the money it was counting on. Key staffers, including Peter Marquez, the firm’s policy guy in Washington, had already jumped ship. “We were all frustrated about the revenue prospects, and the business model wasn’t working out the way we’d hoped,” recalls Marquez, who now works for a Washington, DC, advisory shop called Andart Global.

“There was more of a focus on the religion of space than the business of space,” Marquez adds. “There’s the religious [segment] of space people who believe that almost like manifest destiny, we’re supposed to be exploring the solar system—and if we believe hard enough, it’ll happen. But the pragmatists were saying there’s no customer base for asteroid mining in the next 12 to 15 years.”

Amid rumors that it was auctioning off its gear, Planetary Resources was acquired last year by ConsenSys, a blockchain software company based in Brooklyn that develops decentralized platforms for signing documents, selling electricity, and managing real estate transactions, among other things. Anderson Tan, an early investor in Planetary Resources, was baffled by the acquisition—and he’s the kind of blockchain guy who promotes other blockchain guys’ blockchain ventures on LinkedIn. “I honestly have no idea … I was shocked. I think they wanted to acquire the equipment and assets,” he says. “For what? I’m not so sure.”

DSI, in turn, was acquired by an aeronautics company named Bradford Space. These acquisitions aren’t taking the companies anywhere. “They’re gone; they’re done. They don’t exist,” says Chad Anderson.

What went wrong? Predictably, ex--employees and investors tell slightly different stories.

Bonin blames DSI’s demise on investors’ unwillingness to take long-term risks. “We had a plan that would take off after a certain point, and we didn’t get to that point,” he explains. “And we were only $10 million away from hitting that point, but our planning was decades long, and a VC fund’s life cycle is one decade long. They’re incompatible.” Meagan Crawford, who worked with Bonin and is now starting her own venture capital fund for commercial space startups, concurs: “A traditional VC time line is 10 years, when they have to give money back to investors, so in seven years they want to exit. A 15-year business plan isn’t going to fit in.”

On the money side, the story is a little less forgiving. “They did not deliver on their promises to investors,” says Chad Anderson, whose Space Angels invested in PR. “Both companies were really good at storytelling and marketing and facilitating this momentum around a vision that their technology never really substantiated.” He adds, “I think that these weren’t the right teams to do it.”

There were also bigger structural obstacles—such as, in former employees’ telling, the lack of any infrastructure for an asteroid--mining industry. That put investors off, too: “If you mine an asteroid, mostly likely you’ll [have to] send it to the moon to process it. It wouldn’t be processed on Earth, because the cost would be tremendous,” says Anderson Tan. “So then it’s like a chicken-and-egg problem: do we mine first and then develop a moon base, or invest in building up the moon and then go to asteroid mining?”

On the money side, the story is a little less forgiving.

Finally, asteroid miners had to compete for funding with a proliferating number of other space-related ventures. Between 2009—“the dawn of the entrepreneurial space age”—and today, “we’ve gone from a world with maybe a dozen privately funded space companies serving one client, the government, to one with more than 400 companies worth millions of bucks,” Chad Anderson says. So if commercial space startups seemed like an out-there proposition in 2012, by 2018 VCs who wanted space in their portfolios could have their pick of companies with better short-term prospects: telecom startups selling internet access, for instance, or firms analyzing the much-more-accessible moon.

“The bottom line is that space is hard,” says Henry Hertzfeld, the director of the Space Policy Institute at George Washington University. (Hertzfeld advised Planetary Resources on legal matters; the space world, on Earth, is still very small.) “It’s risky, it’s expensive; lots of high up-front costs. And you need money. You can get just so much money for so long.”