First a definition to clarify the debate

Appropriation is defined by Dictionary.com as "**the act of appropriating or taking possession of something, often without permission or consent.**"

Standard: Utilitarianism

Prefer Utilitarianism for two reasons

First, all consequentialist moral theories devolve to life utilitarianism because they all seek to maximize the best consequences, which cannot occur without life.

Second, utilitarian calculus is the best method to decipher what is just or unjust to a group as opposed to individuals- take governments as an example

Goodin 90:Robert E. Goodin, 1995 Goodin is a Professor of Philosophy at the Research School of the Social Sciences at the Australian National University. Cambridge University Press, "Utilitarianism As a Public Philosophy" pg 63

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more plausible for them (or, more precisely, makes them adopt a form of utilitarianism that we would find more acceptable) than private individuals. Before proceeding with that larger argument, I must therefore say what it is that is so special about public officials and their situations that makes it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices-public and private alike- are made under some degree of uncertainty, of course. But in the nature of things,private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. Public officials, in contrast, at relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices. But that is all. That is enough to allow public policy makers to use the utilitarian calculus–if they want to use it at all–to choose general rules of conduct. Knowing aggregates and averages, they can proceed to calculate the utility payoffs from adopting each alternative possible general rule. But they cannot be sure what the payoff will be to any given individual or on any particular occasion. **Their knowledge of generalities, aggregates and averages is just not sufficiently fine-grained for that.**

The sole contention is moon mining

A: Moon mining is key to helping global warming

Not too late to stop warming but inaction locks in feedback loops which causes extinction

Spratt and Dunlop 2019 Research Director for Breakthrough National Centre for Climate Restoration, Melbourne and international oil, gas and coal industry executive, chairman of the Australian Coal Association, chief executive of the Australian Institute of Company Directors, and chair of the Australian Greenhouse Office Experts Group on Emissions Trading May 2019 David and Ian, "Existential climate-related security risk: A scenario approach," Breakthrough - National Centre for Climate Restoration, https://docs.wixstatic.com/ugd/148cb0_b2c0c79dc4344b279bcf2365336ff23b.pdf ZachDiesel

An existential risk to civilisation is one posing permanent large negative consequences to humanity which may never be undone, either annihilating intelligent life or permanently and drastically curtailing its potential. With the commitments by nations to the 2015 Paris Agreement, the current path of warming is 3°C or more by 2100. But this figure does not include "**long-term" carbon-cycle feedbacks**, which are materially relevant now and in the near future due to the unprecedented rate at which human activity is perturbing the climate system. Taking these into account, the Paris path **would lead to around 5°C of warming by 2100**. Scientists warn that warming of **4°C is incompatible with an organised global community, is devastating to the majority of ecosystems, and has a high probability of not being stable**. The World Bank says **it may be "beyond adaptation"**. But an existential threat may also exist for many peoples and regions at a significantly lower level of warming. In 2017, **3°C of warming was categorised as "catastrophic" with a warning that, on a path of unchecked emissions, low-probability, high-impact warming could be catastrophic by 2050.** The Emeritus Director of the Potsdam Institute, Prof. Hans Joachim Schellnhuber, warns that "climate change is now reaching the end-game, where very soon humanity must choose between taking unprecedented action, or accepting that it has been left too late and bear the consequences." He says that **if we continue down the present path "there is a very big risk that we will just**

end our civilisation. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years." Unfortunately, **conventional risk and probability analysis becomes useless in these circumstances because it excludes the full implications of outlier events and possibilities lurking at the fringes** Prudent risk-management means a tough, objective look at the real risks to which we are exposed, especially at those "fat-tail" **events, which may have consequences that are damaging beyond quantification, and** threaten **the survival of human civilisation**. Global warming **projections display a** "fat-tailed" distribution with a **greater likelihood of warming that is well in excess of the average amount of warming predicted by climate models**, and are of a higher probability than would be expected under typical statistical assumptions. More importantly, the risk lies disproportionately in the "fat-tail" outcomes, as illustrated in Figure 1. This is a particular concern with **potential climate tipping-points** – **passing critical thresholds which result in step changes in the climate system that will be irreversible** on human timescales — **such as the polar ice sheets** (and hence sea levels), **permafrost and other carbon stores,** where the impacts of global warming are non-linear and difficult to model with current scientific knowledge. Recently, attention has been given to a "hothouse Earth" scenario, in which **system feedbacks and their mutual interaction could drive the Earth System climate to a point of no return, whereby further warming would become self-sustaining. This "hothouse Earth" planetary threshold could exist at a temperature rise as low as 2°C, possibly even lower**

The moon possesses fuel necessary to power nuclear fusion reactors

Elvis et al 2020 [Elvis Martin, Krolikowski Alanna and Milligan Tony 2020 Concentrated lunar resources: imminent implications for governance and justicePhil. Trans. R. Soc. A.3792019056320190563 http://doi.org/10.1098/rsta.2019.0563]Wrench **Thorium- and uranium**-rich regions **could** in principle **be mined for** radioactive **fuel,** though even the 'high' concentrations of thorium (approx. 10 ppm) on the Moon are low by terrestrial standards [36]. Thorium and uranium are found together [36]. The highest concentrations lie in 34 regions that are certainly less than 80 km across [36] and may be much smaller. Iron oxide (FeO) is anticorrelated with the presence of thorium and can be mapped in finer detail [36]. In these maps, the strongest minima, representing the richest thorium deposits, are only a few kilometres across. The anticorrelation may not be a reliable measure though; improved direct measurements of thorium are really needed. Rare earth elements (REEs) are not actually rare on Earth, but they are not highly concentrated, and their extraction is difficult and highly polluting. Their new-found importance for technology gives a political and strategic value to having reliable supplies. **The Moon contains a region of enhanced** REE **concentrations** in the 'KREEP' zone of the Oceanus Procellarum [37] (the right eye of the 'Man in the Moon'). KREEP stands for 'potassium (chemical symbol K), **rare earth elements and phosphorus** (chemical symbol P)'. This KREEP Terrane province appears to have been among the last regions of the lunar surface to solidify, leading to this unusual concentration. It is not clear that REEs are sufficiently concentrated to be ore bearing [38]. More detailed mapping is needed. KREEP is generally found where thorium is found and so thorium may be a guide to high REE concentrations [37]. **Helium-3** (3He) is often promoted as **a unique lunar resource to fuel fusion reactors**, as it is captured by the lunar regolith from the solar wind. (**However, we do not yet have fusion reactors**

Nuclear Energy is key to solve global warming

World Nuclear April 2020 "Nuclear Energy and Sustainable Development" https://world-nuclear.org/information-library/energy-and-the-environment/nuclear-energy-and-sustainable-development.aspx] Wrench

The continued use of fossil fuels therefore has profound intra- and intergenerational social, economic and environmental implications. The resulting dual challenge – the need to reduce harmful emissions, whilst providing more energy to more people – positions the energy sector at the heart of achieving sustainable development. There is no technology that is fully without risk to people or the environment. For example, whilst low-carbon sources of energy do not emit carbon dioxide at the point of use, they are responsible for emissions and waste during construction, manufacturing and decommissioning. As such, any energy technology's compatibility with sustainable development objectives must be assessed in relative terms – in the light of the alternatives. **As the only proven, scalable and reliable low-carbon**

source of energy, nuclear power will be required to play a pivotal role if the world is to reduce its reliance on fossil fuels to address climate change and chronic air pollution. More broadly, however, **the proposition of nuclear power as a sustainable energy source is fundamentally robust due to its innate energy density, and its internalisation of health and environmental costs. Using nuclear energy has numerous sustainability advantages relative to alternative forms of generation. By expanding its use, modern and affordable energy can be provided to all who currently lack access, whilst reducing the human impact on the natural environment, and ensuring that the world's ability to meet its other sustainable development goals is not curtailed.**

Mining on the moon puts less stress on the earth

Delay and Bendebury 20' [Columbia University in the City of New York. Doctor of Philosophy - PhDBiophysics. 2013 - 2017. Columbia University in the City of New York. Master of Science - MSBiology. 2013 - 2016. Columbia. Master of Philosophy - MPhil. 2013 - 2015. Kenyon College. Bachelor of Arts - BANeuroscience. 2000 - 2004.}

https://astronomy.com/news/2020/11/is-space-mining-the-eco-friendly-choice

Operations like mining, which take a heavy toll on the environment, would be moved off Earth. It's a magnificently far-fetched idea, one that's more at home in the pages of a novel than on the front page of the *New York Times*. But **humanity is** already **moving in that direction.** In this rendition of the human timeline, we don't abandon heavy industry. **We learn to manufacture what we need to maintain our lives** in the cold vacuum of space, just in **time to give Earth a break**. The race to build an industrial foundation in space has already begun, too: **Musk promises Mars Base Alpha by 2028; Bezos'** own **Blue Origin is working on** a "**sustained human presence on the Moon;"** and NASA's Lunar Gateway, a permanent orbital station, is set to go into operation by the end of the decade. **In 40 years, launch costs have fallen from $85,000 per kilogram to less than $1,000/kg,** and NASA **hopes to get this under $100/kg in** the next **few years. This** trajectory **makes space-mining** advocate and Skycorp CEO Dennis Wingo **more certain than ever** that we are on the cusp of a new era of space mining. He reiterates to *Astronomy* that "**industrial activity on the Moon is how we** can **make things better** here **on Earth**." Instead of returning raw materials from the Moon to Earth, which Wingo suggests would "be kind of like shipping dirt from Jakarta to the U.S.," **the space-mining industry would** chase **profit**s **by** finding ways to **process raw materials** directly at their icy, remote sources. On the horizon, he envisions a solar-powered lunar base capable of producing the gigawatt-level power needed for mining. The lunar surface, in his eyes, is an incredibly efficient place for industrial processes. Wingo calculates that "the **best vacuum** you can get **on the Earth is about 10^{-5} Torr."** (That's about one one-hundred-millionth the standard pressure at sea level.) "But **on the lunar surface,** you **have infinite quantities** of 10^{-12} Torr."

B: The Private Sector is key

Long-standing international law explicitly bans Public Sector from settling in space

United Nations 67 (United Nations, "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies" https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html)

The Outer Space Treaty was considered by the Legal Subcommittee in 1966 and agreement was reached in the General Assembly in the same year (resolution 2222 (XXI)). The Treaty was largely based on the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, which had been adopted by the General Assembly in its resolution 1962 (XVIII) in 1963, but added a few new provisions. The Treaty was opened for signature by the three depository Governments (the Russian

Federation, the United Kingdom and the United States of America) in January 1967, and it entered into force in October 1967. **The Outer Space Treaty provides the basic framework on international space law, including the following principles:**

- the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;
- outer space shall be free for exploration and use by all States;
- **outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means;**
- States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;
- the Moon and other celestial bodies shall be used exclusively for peaceful purposes;
- astronauts shall be regarded as the envoys of mankind;
- **States shall be responsible for national space activities whether carried out by governmental or non-governmental entities;**

This only leaves private-public partnerships where private corporations go to space and public sector watches over them

US Government Publishing Office 2021 [Us Government Publishing Office January 2021 con. Rept. 2021 - Chapter 8: Exploring New Frontiers in Space Policy and Property Rights Acessed 1/8/2021 https://www.govinfo.gov/content/pkg/ERP-2021/pdf/ERP-2021-chapter8.pdf] Wrench

The United States has been on the cutting edge of space exploration since the dawn of the space age and has become the world leader in commercial activity in space. In the 20th century, the United States became the first and only nation to send individuals to the Moon. After the end of the Apollo Program, the United States pioneered the Space Shuttle, the world's first reusable spacecraft. Now American engineers have become the first to demonstrate and operationalize the capabilities of commercial spacecraft for orbital cargo delivery, first-stage reusability, and human spaceflight. **In the 21st century, the United States has ushered in a new era of space exploration based on public-private partnerships and the success of private sector investment in space technologies.** The Trump Administration recognizes the opportunities and benefits afforded by **this new era and has advanced policies that encourage private sector innovation, collaboration with commercial companies, and a regulatory environment more conducive to investment in space. In doing so, this Administration is not only accelerating the development of the today's space industry; it is also laying the foundation for a viable space economy that can continue to develop and expand in the coming decades**. This past year has seen historic advances in spaceflight and space policy, even in the midst of the global COVID-19 pandemic. After the reestablishment of USSPACECOM as a combatant command for the space domain on August 19, 2019, President Trump established the U.S. Space Force (USSF), the sixth branch of the U.S. military, on December 20, 2019. The mission of USSF is to organize, train, and equip space forces to "protect U.S. and allied interests in space and to provide space capabilities to the joint force" (USSF n.d.). In addition, on May 30, 2020, and November 15, 2020, in major milestones for the partnership between the National Aeronautics and Space Administration (NASA) and the private sector, SpaceX launched a total of six astronauts from Cape Canaveral to the International Space Station (ISS). These missions, which represent the first commercial human spaceflights in history, are an important step for the private sector's role in the space economy.

Blocks to Aff

Profit incentive drives private companies to eliminate space junk without the need of landfill space- SSTL proves

Mark **Strauss 18,** 8-31-2018, "Will space be kept clean of debris? Americans are skeptical," Pew Research Center, https://www.pewresearch.org/fact-tank/2018/08/31/as-debris-piles-up-americans-are-skeptical-enough-will-be-done-to-limit-space-junk/ ZachDiesel

Private companies might, in fact, **profit from the growing need to eliminate existing space junk from Earth's orbit.** One recent business study estimates that the global market for monitoring and removing debris will generate $2.9 billion in revenue by 2022. **Technology for debris removal is currently being tested at the International Space Station. A satellite built by the British company Surrey Satellite Technology Limited,** which is equipped with a harpoon and net, **will test a system for capturing large pieces of space junk.** At the end of its mission, **it will** unfurl a drag sail to slow its speed, **bring**ing **itself and the captured debris out of orbit, where it will burn up as it enters the atmosphere. No landfill required.**

This doesnt happen- satellites are unharmed

Luis **Villazon 18** "Does the debris around Earth affect the atmosphere?" Science Focus https://www.sciencefocus.com/space/does-the-debris-around-earth-affect-the-atmosphere/

There is no direct effect, although the density of space debris is now so great that astronomical observations are often degraded by it. The main problem is that of collisions with operational spacecraft. With an average impact speed of 10km/s, any piece of debris larger than 1cm in diameter can cause a catastrophic impact.There are more than 100,000 such objects, including several dropped by astronauts during spacewalks, such as a camera, a glove and a pair of pliers. Most, however, have come from exploding rocket stages and satellites. The larger objects are tracked and spacecraft (including satellites) occasionally have to manoeuvre to avoid them.The main threat to our weather from space junk is rather indirect: the density of the junk may become so great that it could hinder our ability to use weather satellites, and hence to monitor weather changes caused by our own ground-based pollution. The US, Russia, Japan, France and the European Space Agency have now issued orbital debris mitigation guidelines.