# Framework

#### The value is justice, defined as giving each their due.

#### The value criterion is util defined as maximizing expected well-being.

**Askari 20**  -- economist, scholar of economic development in the Middle East

[Hossein, and Abbas Mirakhor, The Utilitarian Conception of Justice and Its Critics (Bentham to Hayek). In: Conceptions of Justice from Islam to the Present. Political Economy of Islam. Palgrave Macmillan, Cham. 2020, <https://doi.org/10.1007/978-3-030-16084-5_4>, accessed 7-10-21]

As a moral theory, utilitarianism considers that pleasure or general happiness should be the objective of a moral life. As a theory of justice, utilitarianism holds that all human actions (as well as **those of a state)** are virtuous, moral, and **just** when they contribute to **achieving general happiness**. Hence, actions are judged based on their **consequences**. Actions detrimental to general happiness are considered **unjust**. Utilitarianism relates **justice to utility**. State legislation’s sole purpose must be the promotion of **general utility** (happiness). Utilitarianism is consequentialist because it focuses **solely on ends** and not the means. The moral worth of an action is dictated by the end it achieves. Morally good, just, action’s end promotes the general happiness, regardless of means to that end. Actions that have a **detrimental effect** on the general happiness of collectivity are **deemed unjust**, regardless of the virtuousness and nobility of means selected.

**Prefer util because:**

#### It’s a prerequisite to any other framework - Value requires us to be alive in the future.

Bostrom 12 [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]

These reflections on moral uncertainty suggest an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ Our present understanding of axiology might well be confused. We may not now know — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet be able to imagine the best ends of our journey. If we are indeed profoundly uncertain about our ultimate aims, then we should recognize that there is a great option value in preserving — and ideally improving — our ability to recognize value and to steer the future accordingly. Ensuring that there will be a future version of humanity with great powers and a propensity to use them wisely is plausibly the best way available to us to increase the probability that the future will contain a lot of value. To do this, we must prevent any existential catastrophe.

#### 2. Evaluating consequences is key to ethics

Runciman 17,(David) Politics, Cambridge University, “Political Theory and Real Politics in the Age of the Internet,” The Journal of Political Philosophy, Volume 25, Issue 1, March 2017, Pages 3–21

Contemporary political realism carries echoes of this line of argument and of Bentham's shift from the weaker to the stronger version of it, even though Bentham's direct influence is rarely in evidence. Critics of the current ubiquity of the language of human rights often point out that in the absence of a robust account of the power relations that are needed to underpin any rights regime—in particular, an answer to the question of who does the enforcing—all such talk is a massive distraction from the real business of improving the situation on the ground to which human rights are meant to apply.9 But for more radical critics the emptiness of human rights talk is too convenient to be merely a confusion: it serves as the perfect cover for the sinister interests of those engaged in neo-colonial projects of exploitation and expropriation.10 However, these two poles of the Benthamite case against moralism—from inadvertent confusion to deliberate deception—do not exhaust the range of explanations for what is wrong with it. There is another answer, drawn from an alternative intellectual tradition, which appears more frequently in the current realist literature. This is the Weberian idea that moralism does not so much obscure what politicians are really up to, as conceal the truth about their personal motives from political actors themselves. In other words, political moralism is less a form of deception than of self-deception: it lets politicians avoid looking political reality squarely in the face because it allows them to believe they have their eyes set on something higher. Conviction politicians think they can transcend the messy reality of politics. That belief is dangerous because their response when they encounter the messy reality is to deny it, or to ignore it, or to insist they can mould it to their higher purposes, which only makes the mess worse. Weber's case against allowing an ethic of conviction to trump an ethic of responsibility in politics—which requires, among other things, that politicians face up to the unintended consequences of what they do—remains compelling.11 But it does not map onto any sharp distinctions between realism and moralism. That is because the convictions that can breed self-deception are not necessarily moralistic beliefs; they can be beliefs about anything, including beliefs about how contingency trumps moral certainty. On the Weberian account it is not what you believe but how you believe it that makes the difference.

#### Calculable – it’s a cost-benefit analysis – which we do all the time

#### 4. Phenomenal introspection is reliable and proves that util’s true.

**Sinhababu** Neil (National University of Singapore) “The epistemic argument for hedonism” [http://philpapers.org/archive/SINTEA-3 accessed 2-4-16](http://philpapers.org/archive/SINTEA-3%20accessed%202-4-16) JW

The Odyssey's treatment of these events demonstrates how dramatically **ancient Greek moral intuitions differ from ours.** It doesn't dwell on the brutality of Telemachus, who killed twelve women for the trivial reasons he states, making them suffer as they die. While gods and men seek vengeance for other great and small offenses in the Odyssey, no one finds this mass murder worth avenging. It's a minor event in the denouement to a happy ending in which Odysseus (who first proposes killing the women) returns home and Telemachus becomes a man. **That the[y] Greeks could so easily regard these murders as part of a happy ending for heroes shows how deeply we disagree with them**. It's as if we gave them a trolley problem with the 12 women on the side track and no one on the main track, and they judged it permissible for Telemachus to turn the trolley and kill them all. And this isn't some esoteric text of a despised or short-lived sect, but a central literary work of a long-lived and influential culture. **Human history offers similarly striking examples of disagreement** on a variety of topics. These include **sexual morality; the treatment of animals**; the treatment of **other ethnicities, families, and social classes; the consumption of intoxicating substances; whether and how one may take vengeance; slavery; whether public celebrations are acceptable; and gender roles.**12 Moral obligations to commit genocide were accepted not only by some 20th century Germans, but by much of the ancient world, including the culture that gave us the Old Testament. One can only view the human past and much of the present with horror at the depth of human moral error and the harm that has resulted. One might think to explain away much of this disagreement as the result of differing nonmoral beliefs. Those who disagree about nonmoral issues may disagree on the moral rightness of a particular action despite agreeing on the fundamental moral issues. For example, they may agree that healing the sick is right, but disagree about whether a particular medicine will heal or harm. This disagreement about whether to prescribe the medicine won't be fundamentally about morality, and won't support the argument from disagreement. I don't think the moral disagreements listed above are explained by differences in nonmoral belief. This isn't because sexists, racists, and bigots share the nonmoral views of those enlightened by feminism and other egalitarian doctrines – they don't. Rather, their differing views on nonmoral topics often are rationalizations of moral beliefs that fundamentally disagree with ours.13 Those whose fundamental moral judgments include commitments to the authority of men over women, or of one race over another, will easily accept descriptive psychological views that attribute less intelligence or rationality to women or the subjugated race.14 Moral disagreement supposedly arising from moral views in religious texts is similar. Given how rich and many-stranded most religious texts are, interpretive claims about their moral teachings often tell us more about the antecedent moral beliefs of the interpreter than about the text itself. This is why the same texts are interpreted to support so many different moral views. Similar phenomena occur with most moral beliefs. Environmentalists who value a lovely patch of wilderness will easily believe that its destruction will cause disaster, those who feel justified in eating meat will easily believe that the animals they eat don't suffer greatly, and libertarians who feel that redistributing wealth is unjust will easily believe that it raises unemployment. We shouldn't assume that differing moral beliefs on practical questions are caused by fundamental moral agreement combined with differing nonmoral beliefs. Often the differing nonmoral beliefs are caused by fundamental moral disagreement. As we have no precise way of quantifying the breadth of disagreement or determining its epistemic consequences, it's unclear exactly how much disagreement the argument requires. While this makes the argument difficult to evaluate, it shouldn't stop us from proceeding, as we have to use the unclear notion of widespread disagreement in ordinary epistemic practice. If 99.9% of botanists agree on some issue about plants, non-botanists should defer to their authority and believe as most of them do. But if disagreement between botanists is suitably widespread, non-botanists should remain agnostic. A more precise and systematic account of when disagreement is widespread enough to generate particular epistemic consequences would be very helpful. Until we have one, we must employ the unclear notion of widespread disagreement, or some similar notion, throughout epistemic practice. Against the background of widespread moral disagreement, there may still be universal or near-universal agreement on some moral questions. For example, perhaps all cultures agree that one should provide for one’s elderly parents, even though they generally disagree elsewhere. How do these narrow areas of moral agreement affect the argument? This all depends on whether the narrow agreement is reliably or unreliably caused. If narrow agreement results from a reliable process of belief-formation, it lets us avoid error, defeating the argument from disagreement. But widely accepted moral beliefs may result from widely prevailing unreliable processes leading everyone to the same errors. There's no special pressure to explain agreement in terms of reliable processes when disagreement is widespread. Explaining agreement in terms of reliable processes is preferable when we have some reason to think that the processes involved are generally reliable. Then we would want to understand cases of agreement in line with the general reliability of processes producing moral belief. But if disagreement is widespread, error is too. Since moral beliefs are so often false, invoking unreliable processes to explain them is better than invoking reliable ones. The next two sections discuss this in more detail. We have many plausible explanations of narrow agreement on which moral beliefs are unreliably caused. Evolutionary and sociological explanations of why particular moral beliefs are widely accepted often invoke unreliable mechanisms.15 On these explanations, we agree because some moral beliefs were so important for reproductive fitness that natural selection made them innate in us, or so important to the interests controlling moral education in each culture that they were inculcated in everyone. For example, parents' influence over their children's moral education would explain agreement that one should provide for one's elderly parents. Plausible normative ethical theories won't systematically connect these evolutionary and sociological explanations with moral facts. If disagreement and error are widespread, they'll provide useful ways to reconcile unusual cases of widespread agreement with the general unreliability of the processes producing moral belief. 1.3 If there is widespread error about a topic, we should retain only those beliefs about it formed through reliable processes Now I'll defend 3. First I'll show how the falsity of others' beliefs undermines one's own belief. Then I'll clarify the notion of a reliable process. I'll consider a modification to 3 that epistemic internalists might favor, and show that the argument accommodates it. I'll illustrate 3's plausibility by considering cases where it correctly guides our reasoning. Finally, I'll show how 3 is grounded in the intuitive response to grave moral error. First, a simple objection: “Why should I care whether other people have false beliefs? That's a fact about other people, and not about me. Even if most people are wrong about some topic, I may be one of the few right ones, even if there's no apparent reason to think that my way of forming beliefs is any more reliable.” While **widespread error** leaves open the possibility that one has true beliefs, it **reduces the probability that my beliefs are true.** Consider a parallel case. I have no direct evidence that I have an appendix, but I know that previous investigations have revealed appendixes in people. So induction suggests that I have an appendix. Similarly, I know on the basis of 1 and 2 that people's moral beliefs are, in general, rife with error. So **even if I have no direct evidence of error in my moral beliefs, induction suggests that they are rife with error as well**. 3 invokes the reliability of the processes that produce our beliefs. Assessing processes of belief-formation for reliability is an important part of our epistemic practices. If someone tells me that my belief is entirely produced by wishful thinking, I can't simply accept that and maintain the belief. Knowing that wishful thinking is unreliable, I must either deny that my belief is entirely caused by wishful thinking or abandon the belief. But if someone tells me that my belief is entirely the result of visual perception, I'll maintain it, assuming that it concerns sizable nearby objects or something else about which visual perception is reliable. While providing precise criteria for individuating processes of belief-formation is hard, as the literature on the generality problem for reliabilism attests, individuating them somehow is indispensable to our epistemic practices.16 Following Alvin Goldman's remark that “It is clear that our ordinary thought about process types slices them broadly” (346), I'll treat cognitive process types like wishful thinking and visual perception as appropriately broad.17 Trusting particular people and texts, meanwhile, are too narrow. Cognitive science may eventually help us better individuate cognitive process types for the purposes of reliability assessments and discover which processes produce which beliefs. Epistemic internalists might reject 3 as stated, claiming that it isn't widespread error that would justify giving up our beliefs, but our having reason to believe that there is widespread error. They might also claim that our justification for believing the outputs of some process depends not on its reliability, but on what we have reason to believe about its reliability. The argument will still go forward if 3 is modified to suit internalist tastes, changing its antecedent to “If we have reason to believe that there is widespread error about a topic” or changing its consequent to “we should retain only those beliefs about it that we have reason to believe were formed through reliable processes.” While 3's antecedent might itself seem unnecessary on the original formulation, it's required for 3 to remain plausible on the internalist modification. Requiring us to have reason to believe that any of our belief-formation processes are reliable before retaining their outputs might lead to skepticism. The antecedent limits the scope of the requirement to cases of widespread error, averting general skeptical conclusions. The argument will still attain its conclusion under these modifications. Successfully defending the premises of the argument and deriving widespread error (5) and unreliability (7) gives those of us who have heard the defense and derivation reason to believe 5 and 7. This allows us to derive 8. (Thus the pronoun 'we' in 3, 6, and 8.) 3 describes the right response to widespread error in many actual cases. Someone in the 12th century, especially upon hearing the disagreeing views of many cultures regarding the origins of the universe, would do well to recognize that error on this topic was widespread and retreat to agnosticism about it. Only when modern astrophysics extended reliable empirical methods to cosmology would it be rational to move forward from agnosticism and accept a particular account of how the universe began. Similarly, disagreement about which stocks will perform better than average is widespread among investors, suggesting that one's beliefs on the matter have a high likelihood of error. It's wise to remain agnostic about the stock market without an unusually reliable way of forming beliefs – for example, the sort of secret insider information that it's illegal to trade on. 3 permits us to hold onto our moral beliefs in individual cases of moral disagreement, suggesting skeptical conclusions only when moral disagreement is widespread. When we consider a single culture's abhorrent moral views, like the Greeks' acceptance of Telemachus and Odysseus' murders of the servant women, we don't think that maybe the Greeks were right to see nothing wrong and we should reconsider our outrage. Instead, we're horrified by their grave moral error. I think this is the right response. We're similarly horrified by the moral errors of Hindus who burned widows on their husbands' funeral pyres, American Southerners who supported slavery and segregation, our contemporaries who condemn homosexuality, and countless others. The sheer number of cases like this requires us to regard moral error as a pervasive feature of the human condition. Humans typically form moral beliefs through unreliable processes and have appendixes. We are humans, so this should reduce our confidence in our moral judgments. The prevalence of error in a world full of moral disagreement demonstrates how bad humans are at forming true moral beliefs, undermining our own moral beliefs. Knowing that unreliable processes so often lead humans to their moral beliefs, we'll require our moral beliefs to issue from reliable processes. 1.4 If there is widespread error about morality, there are no reliable processes for forming moral beliefs A reliable process for forming moral beliefs would avert skeptical conclusions. I'll consider several processes and argue that they don't help us escape moral skepticism. Ordinary moral intuition, whether it involves a special rational faculty or our emotional responses, is shown to be unreliable by the existence of widespread error. The argument from disagreement either prevents reflective equilibrium from generating moral conclusions or undermines it. Conceptual analysis is reliable, but delivers the wrong kind of knowledge to avert skepticism. If all our processes for forming moral beliefs are unreliable, moral skepticism looms. 4 is false only because of one process – phenomenal introspection, which lets us know of the goodness of pleasure, as the second half of this paper will discuss. Widespread error guarantees the unreliability of any process by which we form all or almost all of our moral beliefs. While widespread error allows some processes responsible for a small share of our moral beliefs to predominantly create true beliefs, it implies that any process generating a very large share of moral belief must be highly error-prone. Since the process produced so many of our moral beliefs, and so many of them are erroneous, it must be responsible for a large share of the error. If more of people's moral beliefs were true, things would be otherwise. Widespread truth would support the reliability of any process that produced most or all of our moral beliefs, since that process would be responsible for so much true belief. But given widespread error, ordinary moral intuition must be unreliable. This point provides a forceful response to Moorean opponents who insist that we can't give up the reliability of a process by which we form all or nearly all of our beliefs on an important topic, since this would permit counterintuitive skeptical conclusions. Even if this Moorean response helps against external world skeptics who employ counterfactual thought experiments involving brains in vats, it doesn't help against moral skeptics who use 1 and 2 to derive widespread actual error. Once we accept that widespread error actually obtains, a great deal of human moral knowledge has already vanished. Insisting on the reliability of the process then seems implausible and pointless. I'll briefly consider two conceptions of moral intuition – as a special rational faculty by which we grasp non-natural moral facts, and as a process by which our emotions lead us to form moral beliefs – and show how widespread error guarantees their unreliability. Some philosophers regard moral intuition as involving a special rational faculty that lets us know non-natural moral facts.18 They argue that knowledge on many topics including mathematics, logic, and modality involves this rational faculty, so moral knowledge might operate similarly. This suggests a way for them to defend the reliability of moral intuition in the face of widespread error: if intuition is reliable about these other things, its overall reliability across moral and nonmoral areas allows us to reliably form moral beliefs by using it. This defense won't work. When an epistemic process is manifestly unreliable on some topic, as widespread error shows any process responsible for most of our moral beliefs to be, the reliability of that process elsewhere won't save it on that topic. Even if testimony is reliable, this doesn't imply the reliability of compulsive gamblers' testimony about the next spin of the roulette wheel. Even if intuition remains reliable elsewhere, widespread disagreement still renders it unreliable in ethics. I see ordinary moral intuition as a process of emotional perception in which our feelings cause us to form moral beliefs.19 Just as visual experiences of color cause beliefs about the colors of surfaces, emotional experiences cause moral beliefs. Pleasant feelings like approval, admiration, or hope in considering actions, persons, or states of affairs lead us to believe they are right, virtuous or good. Unpleasant emotions like guilt, disgust, or horror in considering actions, persons, or states of affairs lead us to believe they are wrong, vicious, or bad. We might have regarded this as a reliable way to know about moral facts, just as visual perception is a reliable way to know about color, if not for widespread error. But because of widespread error, we can only see it as an unreliable process responsible for our dismal epistemic situation. Reflective equilibrium is the prevailing methodology in normative ethics today. It involves modifying our beliefs about particular cases and general principles to make them cohere. Whether or not nonmoral propositions like the premises of the argument from disagreement are admissible in reflective equilibrium, widespread error prevents reflective equilibrium from reliably generating a true moral theory, as I'll explain. If the premises of the argument from disagreement are admitted into reflective equilibrium, the argument can be reconstructed there, and reflective equilibrium will dictate that we give up all of our moral beliefs. To avoid this conclusion, the premises of the argument from disagreement would have to be revised away on moral grounds. These premises are a metaethical claim about the objectivity of morality which seems to be a conceptual truth, an anthropological claim about the existence of disagreement, a very general epistemic claim about when we should revise our beliefs, and a more empirically grounded epistemic claim about our processes of belief-formation and their reliability. While reflective equilibrium may move us to revise substantive moral beliefs in view of other substantive moral beliefs, claims of these other kinds are less amenable to such revision. Unless ambitious arguments for revising these nonmoral claims away succeed, we must follow the argument to its conclusion and accept that reflective equilibrium makes moral skeptics of us.20 If only moral principles and judgments are considered in reflective equilibrium, it won't make moral skeptics of us, but the argument from disagreement will undermine its conclusions. The argument forces us to give up the pre-existing moral beliefs against which we test various moral propositions in reflective equilibrium. While we may be justified in believing something because it coheres with our other beliefs, this justification goes away once we see that those beliefs should be abandoned. Coherence with beliefs that we know we should give up doesn't confer justification. Now I'll consider conceptual analysis. It can produce moral beliefs about conceptual truths – for example, that the moral supervenes on the nonmoral, and that morality is objective. It also may provide judgments about relations between different moral concepts – perhaps, that if the only moral difference between two actions is that one would produce morally better consequences than the other, doing what produces better consequences is right. I regard conceptual analysis as reliable, so that the argument from disagreement does not force us to give up the beliefs about morality it produces. Unfortunately, if analytic naturalism is false, as has been widely held in metaethics since G. E. Moore, conceptual analysis won't provide all the knowledge we need to build a normative ethical theory.21 Even when it relates moral concepts like goodness and rightness to each other, it doesn't tell us that anything is good or right to begin with. That's the knowledge we need to avoid moral skepticism. So far I've argued that **our epistemic and anthropological situation, combined with plausible metaethical and epistemic principles, forces us to abandon our moral beliefs**. But if a reliable process of moral belief-formation exists, 4 is false, and we can answer the moral skeptic. The rest of this paper discusses the only reliable process I know of. 2.1 Phenomenal introspection reveals pleasure's goodness Phenomenal introspection, a reliable way of forming true beliefs about our experiences, produces the belief that pleasure is good. Even as our other processes of moral belief-formation prove unreliable, it provides reliable access to pleasure's goodness, justifying the positive claims of hedonism. This section clarifies what phenomenal introspection and pleasure are and explains how phenomenal introspection provides reliable access to pleasure's value. Section 2.2 argues that pleasure's goodness is genuine moral value, rather than value of some other kind. In phenomenal introspection we consider our subjective experience, or phenomenology, and determine what it's like. Phenomenal introspection can be reliable while dreaming or hallucinating, as long as we can determine what the dreams or hallucinations are like. By itself, phenomenal introspection doesn't produce beliefs about things outside experience, or about relations between our experiences and non-experiential things. So it doesn't produce judgments about the rightness of actions or the goodness of non-experiential things. It can only tell us about the intrinsic properties of experience itself. **Phenomenal introspection is generally reliable, even if mistakes about immediate experience are possible**. **Experience is rich in detail**, so one could get some of the details wrong in belief. Under adverse conditions involving false expectations, misleading evidence about what one's experiences will be, or extreme emotional states that disrupt belief-formation, larger errors are possible. Paradigmatically reliable processes like vision share these failings. **Vision sometimes produces false beliefs under adverse conditions**, or when we're looking at complex things. Still, **it's so reliable as to be indispensible in ordinary life. Regarding phenomenal introspection as unreliable is** about **as radical as skepticism about** the reliability of **vision**. While contemporary psychologists reject introspection into one's motivations and other psychological causal processes as unreliable, phenomenal introspection fares better. Daniel Kahneman, for example, writes that “experienced utility is best measured by moment-based methods that assess the experience of the present.”22 Even those most skeptical about the reliability of phenomenal introspection, like Eric Schwitzgebel, concede that we can reliably introspect whether we are in serious pain.23 Then we should be able to introspectively determine what pain is like. So I'll assume the reliability of phenomenal introspection. One can form a variety of beliefs using phenomenal introspection. For example, one can believe that one is having sound experiences of particular noises and visual experiences of different shades of color. **When looking at a lemon and considering the phenomenal states that are yellow experiences, one can form some beliefs about their intrinsic features** – for example, **that they're bright experiences**. And **when considering** experiences of **pleasure, one can make some judgments** about their intrinsic features – for example, **that they're good experiences**. **Just as one can look inward at** one's **experience of lemon yellow and recognize** its **brightness, one can look inward at one's experience of pleasure and recognize its goodness**.24 **When I consider** a situation of **increasing pleasure, I** can **form the belief that things are better than they were before**, just as I form the belief that there's more brightness in my visual field as lemon yellow replaces black. And when I suddenly experience pain, I can form the belief that things are worse in my experience than they were before. Having pleasure consists in one's experience having a positive hedonic tone. Without descending into metaphor, it's hard to give a further account of what **pleasure** is like than to say that **when one has it, one feels good.** As Aaron Smuts writes in defending the view of pleasure as hedonic tone, “to 'feel good' is about as close to an experiential primitive as we get.” 25 Fred Feldman sees pleasure as fundamentally an attitude rather than a hedonic tone.26 But as long as hedonic tones are real components of experience, phenomenal introspection will reveal pleasure's goodness. Opponents of the hedonic tone account of pleasure usually concede that hedonic tones exist, as Feldman seems to in discussing “sensory pleasures,” which he thinks his view helps us understand. Even on his view of pleasure, phenomenal introspection can produce the belief that some hedonic tones are good while others are bad. **There are many different kinds of pleasant experiences**. There are **sensory pleasures**, like the pleasure of tasting delicious food, receiving a massage, or resting your tired limbs in a soft bed after a hard day. There are the pleasures of **seeing that our desires are satisfied**, like the pleasure of winning a game, getting a promotion, or seeing a friend succeed. These experiences differ in many ways, just as the experiences of looking at lemons and the sky on a sunny day differ. It's easy to see the appeal of Feldman's view that pleasures “have just about nothing in common phenomenologically” (79). But just as our experiences in looking at lemons and the sky on a sunny day have brightness in common, **pleasant experiences all have “a certain common quality – feeling good,”** as Roger Crisp argues (109).27 As the analogy with brightness suggests, hedonic tone is phenomenologically very thin, and usually mixed with a variety of other experiences.28 Pleasure of any kind feels good, and displeasure of any kind feels bad. These feelings may or may not have bodily location or be combined with other sensory states like warmth or pressure. “Pleasure” and “displeasure” mean these thin phenomenal states of feeling good and feeling bad. As Joseph Mendola writes, “the pleasantness of physical pleasure is a kind of hedonic value, a single homogenous sensory property, differing merely in intensity as well as in extent and duration, which is yet a kind of goodness” (442).29 What if Feldman is right and hedonic states feel good in fundamentally different ways? Then phenomenal introspection suggests a pluralist variety of hedonism. Each fundamental flavor of pleasure will have a fundamentally different kind of goodness, as phenomenal introspection more accurate than mine will reveal. This isn't my view, but I suggest it to those convinced that hedonic tones are fundamentally heterogenous. If phenomenal introspection reliably informs us that pleasure is good, how can anyone believe that their pleasures are bad? Other processes of moral belief-formation are responsible for these beliefs. Someone who feels disgust or guilt about sex may not only regard sex as immoral, but the pleasure it produces as bad. Even if phenomenal introspection on sexual pleasure disposes one to believe that it's good, stronger negative emotional responses to it may more strongly dispose one to believe that it's bad, following the emotional perception model suggested in section 1.4. Explaining disagreement about pleasure's value in terms of other processes lets hedonists maintain that phenomenal introspection univocally supports pleasure's goodness. As long as negative judgments of pleasure come from unreliable processes instead of phenomenal introspection, the argument from disagreement eliminates them. **The parallel between yellow’s brightness and pleasure’s goodness demonstrates the objectivity of the value detected in phenomenal introspection**. Just as anyone's yellow experiences objectively are bright experiences, **anyone's pleasure objectively is a good experience**.30 While one's phenomenology is often called one's “subjective experience”, facts about it are still objective. “Subjective” in “subjective experience” means “internal to the mind”, not “ontologically dependent on attitudes towards it.” My yellow-experiences objectively have brightness. Anyone who thought my yellow-experiences lacked brightness would be mistaken. Pleasure similarly is objectively good. It's true that anyone's pleasure is good. Anyone who denies this is mistaken. As Mendola writes, the value detected in phenomenal introspection is “a plausible candidate for objective value” (712). Even though phenomenal introspection only tells me about my own phenomenal states, **I can know that others' pleasure is good**. Of course, I can't phenomenally introspect their pleasures, just as I can't phenomenally introspect pleasures that I'll experience next year. But if I consider my experiences of lemon yellow and ask what it would be like if others had the same experiences, I must think that they would be having bright experiences. Similarly, if in a pleasant moment I consider what it's like for others to have exactly the experience I'm having, I must think that they're having good experiences. If they have exactly the same experiences I'm having, **their experiences will have exactly the same intrinsic properties as mine**. This is also how I know that if I have the same experience in the future, it'll have the same intrinsic properties. Even though the only pleasure I can introspect is mine now, I should believe that others' pleasures and my pleasures at other times are good, just as I should believe that yellow experienced by others and myself at other times is bright. My argument thus favors the kind of universal hedonism **that supports utilitarianism**, not egoistic hedonism.

# C1: Inequality

#### The United States’ interest in space ventures threatens colonized nations.

Such and Roberts 19 (Such, Peter (Department of Politics, Cardiff University, Department of Politics, University of the Witwatersrand) and Roberts, Peri (Department of Politics, Cardiff University) “Outer space and Neo-colonial Injustice: Distributive justice and the continuous scramble for dominium,” May 23, 2019, No Publication, https://www.emerald.com/insight/content/doi/10.1108/IJSE-03-2019-0152/full/html)

Recent developments in the rhetoric and policy of the USA towards outer space have the potential to both challenge central values of important global commons regimes and to pose an unjust threat to those states whose economic and societal development has been impeded by colonialism. The move by the USA towards the commercialisation and militarisation of outer space means that we are at the very early stages of a politics that could see the human species determine the fate of the natural and political environment beyond our planet and, in the process, determine the nature of the relationship between all human beings (including future generations). The glimmer of hope, held out by global commons regimes, that we might do so in an ordered, environmentally sustainable, and just manner is dimming as neoliberal economics and realist foreign policy reassert their dominant place in public policy discussions. Greater inequality, more environmental degradation and the prospect of real space wars underlie the significance of the argument we make below This paper takes these challenges seriously and argues that good reasons persist for restating the importance commons values and for developing institutions that advance them, both with regard to outer space and elsewhere.

These threats have become apparent in a series of potentially regime changing moves by the USA. Making the most headlines is the potential establishment of a US Space Force, a new branch of the military equivalent to the Army, Navy, Airforce, Marines and Coastguard. In a speech on 9 August 2018 Vice-President Pence said, “it is not enough to merely have an American presence in space – we must have American dominance in space. And so we will”. Pence continued, “Space is, in […] [Trump’s] words, a war-fighting domain just like land and air and sea” (quoted in www.politifact.com/truth-o-meter/article/2018/aug/13/trump-directedpentagon-create-space-force-what-mi/, accessed 24 October 2018). The second, less sensational, but arguably more significant, development is captured in a speech by Scott Pace, the Executive Secretary of the National Space Council, on 13 December 2017. He said, “it bears repeating: Outer space is not a ‘global commons,’ not the ‘common heritage of mankind,’ not ‘res communis,’ nor is it a public good” (text available at https://spacepolicyonline.com/wpcontent/uploads/2017/12/Scott-Pace-to-Galloway-Symp-Dec-13-2017.pdf, accessed 24 October 2018). These statements are important because, as we shall see, they challenge commons commitments both to pacific use and to benefit sharing. These challenges are not exclusive to the Trump administration or to US foreign policy. Ground-clearing for the liberalisation of the commercialisation of space has been in progress since the 1990s and, with the increasing importance of satellite technology to military as well as civilian activity, it could be argued that the militarisation of space is well underway. However, with these pronouncements, the ways in which space policy is debated in terms of national policy and international policy have changed again. We argue that these changes are such that the duties of justice owed by the richest to the poorest (and more generally by all states to humanity as a whole) are in danger of being neglected. Establishing a space force and enabling extra-terrestrial resource exploitation may well be separate policy initiatives but together they constitute a unified threat, not simply because they both involve “outer space” but because they equally threaten the idea of commons governance and thus the idea of a common interest of humankind. We see this more clearly if we place these US moves in a broad sketch of the historical, legal and political development of the ideas at stake here. In doing so, we will also see more clearly the appropriateness and desirability of a concerted and spirited restatement of the importance of the common interest values at the heart of global commons regimes and of the normative reasons for endorsing and institutionalising such values, complete with the recognition that the world we live in remains a legacy of our colonial histories and the potentially ongoing scramble for dominium. Global politics remains structured by post-colonial power relations. The risk of not responding to these contemporary challenges is the risk of exporting these colonial legacies into space and repeating unjust patterns of recent history.

#### Off-Earth mining leaves low-income countries behind AND destroys their economies.

Dallas, et al. 19 (Dallas, J.A. (Australian Centre for Space Engineering Research, School of Minerals and Energy Resources Engineering, Sydney, Australia) et al. November 2, 2019, "Mining beyond earth for sustainable development: Will humanity benefit from resource extraction in outer space?," *Acta Astronautica*, <https://www.sciencedirect.com/science/article/abs/pii/S0094576519313839>)

The socioeconomic benefits experienced by spacefaring nations as a result of their participation in the space industry are numerous. In a report prepared for NASA in 2013 on the socioeconomic benefits created by the space agency; it was noted that NASA enhances the competitiveness of a number of industries including technology and manufacturing, spurs innovation and growth, promotes international collaboration, contributes to global emerging technologies, expands the scientific knowledge base, and creates employment (Tauri Group, 2013). Similarly, as noted by the European Space Agency (ESA), citizens of Europe reap the benefits brought about by the space industry daily, including technological advancements, employment opportunities, economic growth and enhanced competitiveness of European corporations in the global economy (ESA, 2018). A number of important technologies including communications systems, internet, satellite weather forecasts and GPS are reliant on space technology, resulting in unequal access to these technologies between spacefaring states and non-spacefaring states that cannot afford access. Many lower income nations are also nonspacefaring states that miss out on the socio-economic benefits of the space industry, along with access to important space technology, while spacefaring nations are reaping the many benefits of their participation in the space industry. This is known as the “Space Gap”. The exploitation of space resources is one of the next logical steps in humankind’s development. However, if only high-income, spacefaring nations participate in off-Earth mining and therefore profit from space resources, the space gap, i.e., economic inequality between states, is likely to widen. This is contrary to the United Nations 2030 Agenda for Sustainable Development, which sets out reduced inequalities as one of it’s 17 Sustainable Development Goals (United Nations, 2015). At a UN general assembly meeting in 2014, it was determined that the those living in poverty must benefit from the progress made in space science and technology, noting that space benefits should not be a cause of increasing economic and social inequality between nations (United Nations Press Release, 2014).

Off-Earth mining may not only provide a lucrative resource stream to countries with spacefaring capabilities, but also reduce high-income countries reliance on importing certain minerals from middle or low-income countries. The International Council on Mining and Metals has identified 25 mineral economies—countries where mineral exports comprised 20% or more of total merchandise exports or over 10% of GDP between the years 1995 and 2015 (ICMM, 2018). Given their dependence on mineral exports, mining resources in space and returning them to Earth has potentially serious economic and social implications for these mineral economies. Of the 25 countries with mineral economies identified by ICMM, only four have high income or upper-middle income economies, while 9 have lower-middle income economies, and the 12 remaining nations have low income economies (ICMM, 2018). This means that the majority of countries that have mineral economies are classified by the World Bank as middle-low to low income countries, while the majority of spacefaring nations are high-income countries (World Bank, 2018), (Figure 1). A reduction in mineral exports is likely to have serious economic and social implications for mineral economies. For example, South Africa supplies the majority of the world’s PGMs (Jones, 2005), and if importing nations begin to extract PGMs from metal rich asteroids and return them to Earth, this is likely to have significant economic consequences for South Africa on both the national and community levels. Reduced income from mineral exports will have knock-on effects for the economy, and at the local level a reduction in mining operations could result in unemployment and a reduction in services within mining communities, such as health care and education

#### Space appropriation bolsters inequality by giving technological and economically advantaged countries more ability to complete space ventures.

Chouhan 20 (Chouhan, Karan Singh, (Christ University) “Privatization of Outer-Space and Ownership: ISA as a Model of Regulation for Resource Exploitation” (December 1, 2020). CMR University Journal for Contemporary Legal Affairs, Vol 1, Issue 2, ISSN 2582-4805, Available at SSRN: <https://ssrn.com/abstract=3832673>)

Another argument from the Global South that can be made against the privatization or appropriation is inequality that exists in the world. There are only few countries that have the technology and economy to conduct a space program. Outer Space treaty specifically says that any use and exploration should be done in the interest of the all countries, including developing countries. Similarly, there is a provision for equitable use and sharing of resources of celestial bodies for the developing countries under the moon agreement. The reason for this provision can be understood from a global justice perspective where large numbers of state were pillaged or subjugated hence they couldn’t be economically strong and now cannot take part in space ventures due to lack of capital and technology. Thus, it will be wrong to leave them behind. However, with the introduction of private property in space, it will become almost impossible for the developing or under-developed countries to use space for their own benefit as by the time they are able to conduct any space venture, most of the resource rich celestial bodies would already have been claimed by the technologically and economically strong (and mostly western) states, leaving nothing for the majority of the countries. Thus, a new cycle of inequality will be created where the haves (states with technology) will exploit the resource rich space and have not (developing or under-developed) will be left far behind in poverty.

**And poverty is unjust and kills more people than extinction**

**Gilligan 96** (James Gilligan, Prof @ Harvard, Department of Psychiatry at Harvard Med and Director of the Center for the Study of Violence, 1996, Violence: Our Deadly Epidemic and its Causes p. 191-196)

The deadliest form of violence is poverty. You cannot work for one day with the violent people who fill our prisons and mental hospitals for the criminally insane without being forcible and constantly reminded of the extreme poverty and discrimination that characterizes their lives. Hearing about their lives, and about their families and friends, you are forced to recognize the truth in Gandhi’s observation that the deadliest form of violence is poverty. Not a day goes by without realizing that trying to understand them and their violent behavior in purely individual terms is impossible and wrong-headed. Any theory of violence, especially a psychological theory, that evolves from the experience of men in maximum security prisons and hospitals for the criminally insane must begin with the recognition that these institutions are only microcosms. They are not where the major violence in our society takes place, and the perpetrators who fill them are far from being the main causes of most violent deaths. Any approach to a theory of violence needs to begin with a look at the structural violence in this country. Focusing merely on those relatively few men who commit what we define as murder could distract us from examining and learning from those structural causes of violent death that are far more significant from a numerical or public health, or human, standpoint. By “structural violence” I mean the increased rates of death, and disability suffered by those who occupy the bottom rungs of society, as contrasted with the relatively lower death rates experienced by those who are above them. Those excess deaths (or at least a demonstrably large proportion of them) are a function of class structure; and that structure is itself a product of society’s collective human choices, concerning how to distribute the collective wealth of the society. These are not acts of God. I am contrasting “structural” with “behavioral violence,” by which I mean the non-natural deaths and injuries that are caused by specific behavioral actions of individuals against individuals, such as the deaths we attribute to homicide, suicide, soldiers in warfare, capital punishment, and so on. Structural violence differs from behavioral violence in at least three major respects. \*The lethal effects of structural violence operate continuously, rather than sporadically, whereas murders, suicides, executions, wars, and other forms of behavioral violence occur one at a time. \*Structural violence operates more or less independently of individual acts; independent of individuals and groups (politicians, political parties, voters) whose decisions may nevertheless have lethal consequences for others. \*Structural violence is normally invisible, because it may appear to have had other (natural or violent) causesThe finding that structural violence causes far more deaths than behavioral violence does is not limited to this country. Kohler and Alcock attempted to arrive at the number of excess deaths caused by socioeconomic inequities on a worldwide basis. Sweden was their model of the nation that had come closes to eliminating structural violence. It had the least inequity in income and living standards, and the lowest discrepancies in death rates and life expectancy; and the highest overall life expectancy in the world. When they compared the life expectancies of those living in the other socioeconomic systems against Sweden, they found that 18 million deaths a year could be attributed to the “structural violence” to which the citizens of all the other nations were being subjected. During the past decade, the discrepancies between the rich and poor nations have increased dramatically and alarmingly. The 14 to 18 million deaths a year caused by structural violence compare with about 100,000 deaths per year from armed conflict. Comparing this frequency of deaths from structural violence to the frequency of those caused by major military and political violence, such as World War II (an estimated 49 million military and civilian deaths, including those by genocide—or about eight million per year, 1939-1945), the Indonesian massacre of 1965-66 (perhaps 575,000) deaths), the Vietnam war (possibly two million, 1954-1973), and even a hypothetical nuclear exchange between the U.S. and the U.S.S.R. (232 million), it was clear that even war cannot begin to compare with structural violence, which continues year after year. In other words, every fifteen years, on the average, as many people die because of relative poverty as would be killed by the Nazi genocide of the Jews over a six-year period. This is, in effect, the equivalent of an ongoing, unending, in fact accelerating, thermonuclear war, or genocide, perpetrated on the weak and poor every year of every decade, throughout the world. Structural violence is also the main cause of behavioral violence on a socially and epidemiologically significant scale (from homicide and suicide to war and genocide). The question as to which of the two forms of violence—structural or behavioral—is more important, dangerous, or lethal is moot, for they are inextricably related to each other, as cause to effect.

# C2: Space Debris

#### Ignites Conflicts

#### Space debris exists in the squo and will get worse as appropriation expands.

Muñoz-Patchen 18 (Muñoz-Patchen, Chelsea (research assistant for Professors Daniel Abebe and Jonathan Masur, focusing on intellectual property and constitutional law, associate for the Houston law offices of Latham and Watkins), 8-16-18, “Regulating the Space Commons: Treating Space Debris as Abandoned Property in Violation of the Outer Space Treaty,” Chicago Journal of International Law, Vol 19, No.1, Article 7, pg. 239-240 https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1741&context=cjil)

This issue is of growing importance as more nations and companies gain the ability to launch satellites and other objects into space.37 From February 2009 through the end of 2010, more than thirty-two collision-avoidance maneuvers were reportedly used to avoid debris by various space agencies and satellite companies, and as of March 2012, the crew of the International Space Station (ISS) had to take shelter three times due to close calls with passing debris.38 These maneuvers require costly fuel usage and place a strain on astronauts.39 Furthermore, the launches of some spacecraft have “been delayed because of the presence of space debris in the planned flight paths.” 40 In 2011, Euroconsult, a satellite consultant, projected that there would be “a 51% increase in satellites launched in the next decade over the number launched in the past decade.” 41 In addition to satellites, the rise of commercial space tourism will also increase the number of objects launched into space and thus the amount of debris.42 The more objects are sent into space, and the more collisions create cascades of debris, the greater the risk of damage to vital satellites and other devices relied on for “weather forecasting, telecommunications, commerce, and national security.” The Space Debris Mitigation Guidelines44 were created by UNCOPUOS with input from the IADC and adopted in 2007.45 The guidelines were developed to address the problem of space debris and were intended to “increase mutual understanding on acceptable activities in space.” 46 These guidelines are nonbinding but suggest best practices to implement at the national level when planning for a launch. Many nations have adopted the guidelines to some degree, and some have gone beyond what the guidelines suggest.47 While the guidelines do not address existing debris, they do much to prevent the creation of new debris. The Kessler Syndrome is the biggest concern with space debris. The Kessler Syndrome is a cascade created when debris hits a space object, creating new debris and setting off a chain reaction of collisions that eventually closes off entire orbits.48 The concern is that this cascade will occur when a tipping point is reached at which the natural removal rate cannot keep up with the amount of new debris added.49 At this point a collision could set off a cascade destroying all space objects within the orbit.50 In 2011, The National Research Council predicted that the Kessler Syndrome could happen within ten to twenty years.51 Donald J. Kessler, the astrophysicist and NASA scientist who theorized the Kessler Syndrome in 1978, believes this cascade may be a century away, meaning that there is still time to develop a solution.52

**Spacing mining causes space debris and collisions**

**Scoles, 15** -- Reporter at New Scientist

[Sarah, "Dust from asteroid mining spells danger for satellites," New Scientist, 5-27-15, https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/, accessed 6-25-21]

IF THE gold mine is too far from home, why not move it nearby? It sounds like a fantasy, but would-be miners are already dreaming up ways to drag resource-rich space rocks closer to home. Trouble is, that could **threaten** the web of **satellites** around Earth. Asteroids are not only stepping stones for cosmic colonisation, but may contain metals like gold, platinum, iron and titanium, plus life-sustaining hydrogen and oxygen, and rocket-fuelling ammonia. Space age forty-niners can either try to work an asteroid where it is, or tug it into a more convenient orbit. NASA chose the second option for its Asteroid Redirect Mission, which aims to pluck a boulder from an asteroid’s surface and relocate it to a stable orbit around the moon. But an asteroid’s gravity is **so weak** that it’s not hard for surface particles to **escape into space**. Now a new model warns that debris shed by such transplanted rocks could **intrude** where many defence and communication satellites live – in geosynchronous orbit. According to Casey Handmer of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit **63 times** on average. A satellite in the wrong spot at the wrong time will suffer a **damaging high-speed collision** with that dust. The study also looks at the “catastrophic disruption” of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent (arxiv.org/abs/1505.03800). That may not have immediate consequences. But as Earth orbits get **more crowded** with spent rocket stages and satellites, we will have to worry about **cascades of collisions** like the one depicted in the movie Gravity.

#### Space debris knocks out space vehicles now and gets worse in the future.

Akgun et al. 07 (Akgun, I., (Industrial Engineering , Istanbul Technical University), Cukurtepe, Haydar (Computer Engineering, Istanbul Technical University, Turkey),

& Ince, Fuat (Computer Engineering, Marmara University, Istanbul, Turkey), 14-16 June 2007, “Space Traffic Management System: Challenges and Prospects”,2007 3rd International Conference on Recent Advances in Space Technologies, <https://ieeexplore.ieee.org/abstract/document/4284107>, Accessed 7-13-21)

Space debris consists of remnants from space vehicles, as well as natural objects like meteorites and planetary particles that travel through the Solar System. The exact number of man made objects in space is not known but estimated to be in the tens of thousands, with about 15 000 larger ones (more than a few centimeters) actually being tracked. Each of these objects, even if only a few millimeters in size have the potential of knocking out the operation of a space vehicle, worth millions of dollars. What can be expected in the foreseeable future is only more space objects exasperating the problem.

#### Space debris destroy telecommunication abilities.

Jakhu 07 (Jakhu, Ram, (Institute of Air and Space Law, McGill University, Montreal, Canada)

9-10 -07, “Legal Issues of Satellite Telecommunications, The Geostationary Orbit, and Space Debris. Astropolitics, 5(2), pg. 175. doi:10.1080/14777620701580828)

In order to operate a telecommunication satellite system satisfactorily, one needs access to appropriate orbital positions, the satellite’s radio frequencies must not be interfered with, and there must not be any danger to the satellite’s physical health from any external attacks, including from pieces of space debris

#### The rise in space debris triggers conflict because it is hard to tell whether the strikes were accidental or acts of political aggression.

Sample 16 (Sample, Ian (science editor of the Guardian. Before joining the newspaper in 2003, he was a journalist at New Scientist and worked at the Institute of Physics as a journal editor. He has a PhD in biomedical materials from Queen Mary's, University of London),1-22-2016, "Rise in space junk could provoke armed conflict say scientists," https://www.theguardian.com/science/2016/jan/22/rise-in-space-junk-could-provoke-armed-conflict-say-scientists)

In a report to be published in the journal [Acta Astronautica](http://www.journals.elsevier.com/acta-astronautica/), Vitaly Adushkin at the Russian Academy of Sciences in Moscow writes that impacts from space junk, especially on military satellites, posed a “special political danger” and “may provoke political or even armed conflict between space-faring nations. The owner of the impacted and destroyed satellite can hardly quickly determine the real cause of the accident.”

Adushkin adds that in recent decades there have been repeated sudden failures of defence satellites which have never been explained. But there are only two possibilities, he claims: either unregistered collisions with space debris, or an aggressive action by an adversary. “This is a politically dangerous dilemma,” he writes.

#### Space conflicts go nuclear, especially when triggered by disrupted communication ability.

**Grego 15** [LAURA GREGO is a physicist in the Global Security program at UCS. She is an expert in space weapons and security; ballistic missile proliferation; and ballistic missile defense. "Preventing Space War." https://allthingsnuclear.org/lgrego/preventing-space-war]

So says a very good New York Times editorial “Preventing a Space War” this week. Sounds right, if X-Wing fighters come to mind when you think space conflict. But in reality conflict in space is both more likely than one would think and **less likely** to be so **photogenic**. Space as a locus of conflict The Pentagon has known that space could be a flash point at least since the late 1990s when it began including satellites and space weapons in earnest as part of its wargames. The early games revealed some surprises. For example, attacking an adversary’s ground-based anti-satellite weapons before they were used could be the “trip wire” that starts a war: in the one of the first war games, an attack on an enemy’s ground-based lasers was meant to defuse a potential conflict and protect space assets, but instead was interpreted as an act of war and initiated hostilities. The games also revealed that **disrupting** space-based **communication** and information flow or “**blinding**” could **rapidly escalate a war**, eventually leading to **nuclear weapon exchange.** The war games have **continued** over the years with increased **sophistication**, but continue to find that conflicts can **rapidly escalate and become global** when space weapons are **involved**, and that even **minor opponents** can create **big problems**. The report back from the 2012 game, which included **NATO partners**, said these insights have become “virtually axiomatic.” Participants in the most recent Schriever war games found that when **space weapons** were introduced in a **regional crisis**, it **escalated quickly** and was difficult to **stop from spreading**. The compressed timelines, the global as well as dual-use nature of space assets, the difficulty of attribution and seeing what is happening, and the inherent vulnerability of satellites all contribute to this problem. Satellite vulnerability & solutions Satellites are valuable but, at least on an individual basis, physically vulnerable. Vulnerable in that they are relatively fragile, as launch mass is at a premium and so protective armor is too expensive, and a large number of low-earth-orbiting satellites are no farther from the earth’s surface than the distance from Boston to Washington, DC.

#### Even a limited nuclear war kills millions of people and cause extinction.

MacDonald 17 (MacDonald, James. August 26, 2017. “The Environmental Impact of Nuclear War.” JSTOR Daily. Retrieved from: <https://daily.jstor.org/the-environmental-impact-of-nuclear-war/#:~:text=Even%20a%20limited%20nuclear%20war,more%20than%20one%20degree%20Celsius.&text=Fires%20from%20even%20a%20limited,sunlight%20and%20lower%20global%20temperatures> on 12/8/2020)

North Korea is getting closer to mastering ballistic missile technology, and the U.S., a longstanding nuclear power, is displeased. Bellicose threats from both sides have revived memories of Cold War fears. Obviously nothing good would happen to anyone directly in the path of a nuclear blast. But what about everyone else? With all-out nuclear apocalypse unlikely, some researchers (climatologist Alan Robock, Brian Toon, a professor of atmospheric and oceanic sciences, and four colleagues) turned their attention to the possibility of a smaller-scale **nuclear war.** Specifically, they examined potential outcomes of a limited war between nuclear rivals India and Pakistan. Their model assumes that urban areas would be targeted and around 100 weapons deployed. The outlook? Poor. According to their research, independently verified climate models suggest that fires from even a limited war would throw enough soot into the atmosphere to block sunlight and lower global temperatures by more than one degree Celsius (for comparison, the Last Glacial Maximum was only 5 degrees cooler). The temperature drop would not be evenly distributed, with larger drops in continental interiors. These are the most agriculturally rich areas, so disruptions there have the potential to lead to widespread food insecurity (what the researchers call “nuclear famine”). The temperature change would likely reduce and disrupt global precipitation as well. To make matters worse, soot in the upper atmosphere has the potential to globally deplete the planet’s protective ozone layer, further affecting plant growth and human health. All this in addition to the millions killed in the actual war, of course. Even those far removed from the blast zone could suffer. A global production decline would likely have dire consequences for net food importers, even wealthy industrial nations. Poor nations would fare even worse. The models predict that even powerful China might face widespread famine from a limited, regional war. It is less clear whether the effects would be as severe farther away, for example, in North America. Even as the immediate effects die down, studies indicate that ill effects could linger for years. In the 1980s, researchers Herbert D. Grover and Mark A. Harwell examined what the lasting impacts on ecosystems might be. Data from nuclear test sites has shown that radiation may linger in soil, plants, and in food chains. Children in the Marshall Islands experienced thyroid problems long after nuclear tests. Marine food chains are particularly vulnerable both to radiation and the disruptive effects of atmospheric soot. So what would happen in a nuclear conflict between the U.S. and North Korea? A lot would depend on the details, but the worst effects would be felt on the Korean Peninsula and in surrounding areas. This area would likely be hit by more weapons then the U.S. mainland, and the models suggest that regional impacts are highest. No model has taken global climate change into account; some cooling may be offset by rising temperatures. On the bright side, ecosystems can recover. But they may not be useable by humans for a very long time.

#### Asteroid Mining

#### Asteroid mining risks losing the asteroids which strikes other space objects and destroy spacecraft operations.

Sun et al. 20 (Sun, Daoyuan, Dong, Longjun., Shu, W., & Li, Xibing (School of Resources and Safety Engineering, Central South University, Changsha, China), 3-2-2020, “Exploration: safe and clean mining on Earth and asteroids. Journal of Cleaner Production,” <https://www.sciencedirect.com/science/article/abs/pii/S095965262030946X> Accessed 7-13-21)

As for the asteroid capturing method, convenience and celerity are its prominent advantages as the target asteroids can be directly captured to Earth orbit. Nevertheless, there is a risk of losing the captured asteroid in the transporting process and the target asteroid may strike with other NEOs, or manmade objects distributed in LEO. The target asteroid cannot be captured to Earth and the fragments caused by the strike may shock the spacecraft and affect its normal operation. The open cutting method is an efficient mining method because the cutting machine can ensure the successful implementation of non-explosive continuous mining, which means that the time including charging explosives, blasting and ventilating is saved and turned into the effective production time. The underground filling method is beneficial to the space environment as the waste produced in the mining process is reused as useful materials. However, the open cutting method and the underground filling method share the same disadvantage that the loss of minerals and rocks may lead to changes of the previous orbit and speed of the asteroid.

**The lost asteroids cause extinction, famines and economic decline.**

**Higgins, 18** -- correspondent at Vox

[Abigail, covers international development, global health, poverty, and gender. Before Vox she was a foreign correspondent and researcher in East Africa writing for The Washington Post, The Guardian, and Foreign Policy, among others, "10 ways the world is most likely to end, explained by scientists", 10-18-18, Vox, https://www.vox.com/future-perfect/2018/10/18/17957162/nuclear-war-asteroid-volcano-science-climate-change, accessed 12-4-19]

Asteroids are rocks that revolve around the sun and that occasionally collide with the Earth. An asteroid large enough to **cause a global catastrophe** hits Earth every 120,000 years, scientists estimate. It’s likely what **killed the dinosaurs**, and if an asteroid even **one-tenth the size** of the one that **caused their extinction** hit Earth today, the results would be **devastating**. Scientists estimate it could **release enough particles** to **block the sun for months** and cause a **famine** **killing hundreds of millions**.

NASA announced in 2011 that it had mapped more than 90 percent of objects in space larger than 1 kilometer in diameter, and that none of them are likely to hit Earth. But there’s **still a lot we don’t know** about smaller objects that, while unlikely to cause a global catastrophe, could have a **big enough local impact** to **disrupt social and economic systems**.

## 