# Speech 1AC Colleyville Rd 1 vs Clear Springs 2-4 3PM

## 1AR

### Afc

#### Interpretation: The negative must concede the affirmative framework if it is not morally repugnant and the advocacy is topical and disclosed

#### Violation: they didn’t

#### Prefer-

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

#### 2] Topic Ed- Every debate would just be a framework debate which means we never get access to core topic lit – that outweighs on time frame – we only have 2 months

### Record

#### Interp: Debaters must have recordings of their speeches and send them if requested

#### Violation: They didn't record, that was cx

#### A Cheating – debaters can fake internet drop offs and then steal prep which decks reciprocity

#### B Accidents possible, external conditions like power going out, wifi dropping off, or excessive background noise make it impossible to hear in real time, recordings ensure that a speech isn’t given twice, which allows them to remodify and change their strat or incite

#### C Key to check clipping cards and make cheaters lose with literal proof

### Disclosure

#### Interpretation: Debaters must, on the page with their name and the school they attend, disclose their contact information

#### Violation: They didn’t

Graphical user interface, text, application

Description automatically generated

#### Prefer

#### 1] Inclusion – Novices would have a way to contact you about your positions and learn from them and debaters would tell you before round about triggering positions that you’ve read before.

#### 2] Prep Skew- Pre-round disclosure can’t happen if you don’t have a preferable means of contact because I would never know the aff. Cross apply reasons prep skew outweighs.

## 1AC

#### Theory after phil

### FW

#### The litmus test for ethics is certainty and non-arbitrariness – blurry guidelines for ethics allows agents to inconsistently understand morality or arbitrarily opt out which renders ethics useless since it can’t serve as a guide to action.

#### Ethics must be derived from the a priori world –

#### 1] External Worlds Skepticism –

Chapman summarizes 14 [Andrew Chapman (lecturer in philosophy at the University of Colorado, Boulder). “External World Skepticism”. 1000-Word Philosophy: An Introductory Anthology. 6 FEBRUARY 2014. Accessed 12/11/21. <https://1000wordphilosophy.com/2014/02/06/external-world-skepticism/> //Xu]

You’re being deceived by a very powerful evil demon right now. This demon has the ability to manipulate your sensory impressions such that it will seem to you that things are some way when they are not that way at all. Accordingly, things are actually nothing like P. For example, suppose it seems to you as though you are in a room with a table and chair in it and that you are reading from a computer screen, etc. If (1) is true, then you actually are in a room with a table and chair in it and you are reading from a computer screen, etc. If (2) is true, then you are not in a room with a table and chair in it and you are not reading from a computer screen, etc. If (2) is true, things are very different from how they seem to you to be.1

\*Footnote 1\*

1 If the evil demon scenario is too far-fetched for you, imagine that you are dreaming or that you are hallucinating or even that you are in a laboratory and your visual cortex is being stimulated by electrodes.

\*Paragraph Following the First\*

Philosophers call (2) a skeptical scenario. In skeptical scenarios, you are radically misled, deceived, or bamboozled by your evidence in such a way that how things seem to you is different from how things actually are. Perhaps the most famous propounder of skeptical scenarios in the history of philosophy is René Descartes (1596-1650) in his Meditations on First Philosophy (1641). In the Meditations, Descartes considers that he might be dreaming or that he might be being deceived by the evil demon from our scenario (2) above. Hollywood has made much of skeptical scenarios in movies like Total Recall, The Matrix, and Inception. So back to our original question: Which of (1) or (2) is best supported or best justified by its seeming to you that P? If you’re being honest with yourself, you’ll conclude that how things seem equally well supports (1) and (2). From your internal, first-personal perspective, either of (1) or (2) could be true given how things seem to you. And if that weren’t bad enough, here comes the kicker: If both (1) and (2) are equally well supported by your evidence, how can you ever possibly know anything about the world outside your own skin? This is the problem of external world skepticism, perhaps the central problem of modern epistemology.

#### 2] Causal Determinism –

Korsgaard [Korsgaard, Christine (Arthur Kingsley Porter Professor of Philosophy at Harvard University). “Creating The Kingdom of Ends: Reciprocity and Responsibility in Personal Relations.” (p. 317-318). https://www.people.fas.harvard.edu/~korsgaar/CMK.CKE.Essay.pdf]

Here one’s life is regarded as the phenomenal representation or expression of a single choice, the choice of one’s character or fundamental principle. This choice must be understood as occurring outside of time, in the noumenal world. The choice is the one described in the first book of Religion Within the Limits of Reason Alone: the choice of how incentives are to be ordered in one’s most fundamental maxim, the choice between morality and self-love. (R 36/31) As Kant sees it, human beings are subject to certain incentives - impulses which present themselves to us as candidates, so to speak, to be reasons for action. Among these are our desires and inclinations, as well as respect for the moral law. Kant believes that we are not free to ignore such incentives altogether. Instead, our freedom consists in our ability to rank the incentives, to choose whether our self-love shall be governed by morality or morality shall be subordinated to self-love. This fundamental choice then governs our choice of lower-order maxims. The fundamental choice is an act - in the Religion Kant calls it an intelligible act - and it is ultimately this intelligible act that is imputable to us, and makes our phenomenal actions imputable to us. (R 31- 32/26-27) When first exposed to Kant’s view, one may be tempted to try to picture how and where the choice of one’s character enters the processes which ultimately issue in action. Suppose, with violent oversimplification, that it is a law of nature that children raised in certain conditions of poverty and insecurity tend to become somewhat selfish as adults, and suppose that such a childhood has had this effect on Marilyn. Are we to say to her: “Your childhood insecurity gave you an incentive to be selfish, but it is still your own fault if you elevate that incentive into a reason?” Then we are thinking that Marilyn’s freedom inserts itself in between the causes in her background and their ultimate effect.xxiii Or are we supposed to think that, in her noumenal existence, Marilyn wills to be a selfish person? Or, to get even fancier, should we think that in her noumenal existence Marilyn wills the law of nature that deprived children become selfish adults? Obviously, if we try to picture how Marilyn's freedom is related to the forces that determine her, we must imagine it either inserting itself somewhere into the historical process, or standing behind the laws of nature from which this historical process necessarily follows. And both of these pictures seem crazy.xxiv And of course they are crazy. Kant’s response to this problem is to maintain that the question should not be asked. To ask how freedom and determinism are related is to inquire into the relation between the noumenal and phenomenal worlds, a relation which it is in principle impossible to know anything about. But our understanding of what this response amounts to will depend on how we understand the distinction between the noumenal and phenomenal worlds, and the related distinction between the two standpoints from which Kant says we may view ourselves and our actions. This is a large issue which I cannot treat here in a satisfactory way; I shall simply declare my allegiance. On a familiar but as I think misguided interpretation, the distinction between the two worlds is an ontological one; as if behind the beings of this world were another set of beings, which have an active and controlling relation to the beings of this world, but which are inaccessible to us because of the limits of experience. According to this view, we occupy both worlds, and viewing ourselves from the two standpoints we discover two different sets of laws which describe and explain our conduct in the two different worlds. We act on the moral law in the noumenal world, the law of self-love in the phenomenal world. This view gives rise to familiar paradoxes about how evil actions are even possible, and how we could ever be held responsible for them if they were.xxv

#### 3] Is-Ought Gap –

Gray 11 [James W. Gray (MA in philosophy from San Jose State University). "The Is/Ought Gap: How Do We Get "Ought" from "Is?"" Ethical Realism. N.p., 19 July 2011. Web. 28 Oct. 2015. //Massa]

**The is/ought gap is a problem in moral philosophy where what is the case and what ought to be the case seem quite different, and it presents itself as the following question** to David Hume: **How do we *know* what morally ought to be the case from what is the case?** Hume posed the question in A Treatise of Human Nature Book III Part I Section I: In **every system of morality**, which I have hitherto met with, I have always remark’d that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs, when of a sudden I am surpriz’d to find, that instead of the usual copulations of propositions, is and is not, I meet with no proposition that is not connected with an ought, or an ought not. This change **is imperceptible**; but is, however, of the last consequence. **For as this ought**, or ought not, **expresses some new relation** or affirmation, ‘tis necessary that it shou’d be observ’d and explain’d; and at the same time that a reason shou’d be given, **for what seems altogether inconceivable**, how this new relation can be a deduction from others, which are entirely different from it. It is here that Hume points out that **philosophers argue about** various **nonmoral facts, then somehow conclude what ought to be the case** (or what people ought to do) **based on** those facts (about **what is the case**). **For example, we might find out that arsenic is poisonous and conclude that we ought not consume it. But we need to know how nonmoral facts can lead to moral conclusions. These two things seem unrelated.** The is/ought gap doesn’t seem like a problem for nonmoral oughts—what we ought to do to accomplish our goals, fulfill our desires, or maintain our commitments. For example, we could say, “If you want to be healthy, you ought not consume arsenic.” However, it might be morally wrong to consume arsenic. If it is, we have some more explaining to do.

#### Only practical reason is a priori.

Korsgaard [Korsgaard, Christine (Arthur Kingsley Porter Professor of Philosophy at Harvard University). “Creating The Kingdom of Ends: Reciprocity and Responsibility in Personal Relations.” (p. 317-318). https://www.people.fas.harvard.edu/~korsgaar/CMK.CKE.Essay.pdf]

On what I take to be the correct interpretation, the distinction is not between two kinds of beings, but between the beings of this world insofar as they are authentically active and the same beings insofar as we are passively receptive to them. The “gap” in our knowledge exists not because of the limits of experience but because of its essential nature: to experience something is (in part) to be passively receptive to it, and therefore we cannot have experiences of activity as such.xxvi As thinkers and choosers we must regard ourselves as active beings, even though we cannot experience ourselves as active beings, and so we place ourselves among the noumena, necessarily, whenever we think and act. According to this interpretation, the laws of the phenomenal world are laws that describe and explain our behavior. But the laws of the noumenal world are laws which are addressed to us as active beings; their business is not to describe and explain at all, but to govern what we do.xxvii Reason has two employments, theoretical and practical. We view ourselves as phenomena when we take on the theoretical task of describing and explaining our behavior; we view ourselves as noumena when our practical task is one of deciding what to do.xxviii The two standpoints cannot be mixed because these two enterprises - explanation and decision - are mutually exclusive.xxix These two ways of understanding the noumenal/phenomenal distinction yield very different interpretations of Kant’s strictures against trying to picture the relation between the noumenal and phenomenal worlds. On the ontological view, the question how the two worlds are related is one which, frustratingly, cannot be answered. On the active/passive view, it is one which cannot coherently be asked. There is no question that is answered by my descriptions of how Marilyn’s freedom interacts with the causal forces that determine her. For freedom is a concept with a practical employment, used in the choice and justification of action, not in explanation or prediction; while causality is a concept of theory, used to explain and predict actions but not to justify them.xxx There is no standpoint from which we are doing both of these things at once, and so there is no place from which to ask a question that includes both concepts in its answer.

#### O/W – A] Infinite Regress – certainty must answer “why” because it would otherwise allow agents to infinitely question why it’s true – other frameworks allow agents to question every part of it, but questioning reason concedes its authority which proves its inescapable. B] Action Theory – any action can be broken down into an infinite number of sub-actions. Without an account of what an action is, it’s impossible to ask questions about which actions are good. Practical reason solves – the intent to follow through on a maxim unites subactions into a full actions.

#### That justifies universal laws of morality.

#### 1] Principle of Equality – there’s no distinction between practical reasoners – its incoherent to claim that 1+1=2 just for me.

#### 2] Contradictions Explode – if we accept one contradiction we’d accept all statements since you could switch the first half of a disjunctive statement and render any second half true.

#### Thus, the standard is *consistency with universalizable maxims* – actions are ethical insofar as willing it doesn’t infringe on the ability to will it.

#### 1] Performativity – when you enter debate, you presume that you will be free to set and pursue ends in the round because of a system of reciprocally enforced constraints.

#### 2] Ideal Theory Good – a] end point – we’d constantly be fixing injustices as a precondition to ethical action so we never get to the bottom of what is actually ethical b] relevance – every society has different injustices that occur – the resolution is a universal values statement which means you cannot universalize any theory under nonideal theory.

#### 3] Epistemic Confidence – a] modesty is arbitrary in calculating ethical value which can’t serve as a guide to action b] self-defeating – you wouldn’t take two different pills because a doctor recommended one and a stranger another.

#### 4] Ethical frameworks are topicality interpretations of the word ought so they must be theoretically justified. Prefer on resource disparities—focusing on evidence and statistics privileges debaters with the most preround prep excluding lone-wolfs who lack huge evidence files. A debater under my framework can easily be won without any prep since minimal evidence is required. That controls the internal link to other voters because a pre-req to debating is access to the activity.

### Advocacy

#### 1] Private outer space appropriation isn’t universalizable and disrespects extra-terrestrial agential ends.

Segobaetso 18 [Brackets Original. Benjamin Segobaetso. “Ethical Implications of the Colonization, Privatization and Commercialization of Outer Space”. Major research paper submitted to the Faculty of Human Sciences and Philosophy, School of Public Ethics, Saint Paul University, in partial fulfilment of the requirements for the degree of Master of Arts in Public Ethics. May, 2018. Accessed 12/11/21. <https://ruor.uottawa.ca/bitstream/10393/38318/1/Benjamin_Segobaetso_2018.pdf> //Xu]

It can be argued through Kantian ethics that our record here on Earth paints a picture of neoliberal and capitalist policies with tendencies to favour the highest bidder at the exclusion of the under privileged and puts profit first at the expense of the environment. For Kantians, there are two questions that we must ask ourselves whenever we decide to act: (i) Can I rationally will that everyone act as I propose to act? If the answer is no, then we must not perform the action. (ii) Does my action respect the goals of human beings? Again, if the answer is no, then we must not perform the action. Kantian ethicists would argue that extending to space neoliberal and capitalist policies is immoral because these systems create economic disparities and life threatening environmental injustices; therefore, they are set up in a way that we could not rationally will everyone to act the way they act either here on Earth or in space. Also, Kantian ethicists would ask whether the action of extending neoliberal and capitalist policies to space would respect the goals of extra-terrestrial intelligent life if any rather than merely using them for humans’ own purposes? If the answer is no, then the participating agent must not perform the action. Kant wrote on the possible existence of extra-terrestrial intelligent species in the final pages of the last book that he published, Anthropology from a Pragmatic Point of View [Anthropologie in pragmatischer Hinsicht] (1978). In this publication, Kant hinted that the highest concept of the Alien species may be that of a terrestrial rational being [eines irdischen vernünftigen ]; however, he argued that it will be difficult to describe its characteristics because there is no knowledge available of a non-terrestrial rational being [nicht irdischen Wesen] which could be used as a reference in regards to its properties and ultimately classify that terrestrial being as rational. This dilemma will continue until extraterrestrial intelligent life is discovered because comparing two species of rational beings has to be on the basis of experience, but that experience has not been possible yet (Kant, 237-238). In applying Kant’s deontological moral theory, it must first be recognized that Kant visualized a kind of respect in which we all can recognize every rational being exists as an end in itself (1) as being not fully comprehensible by any human understanding, (2) as being an end in him- or herself, and (3) as being a potential source of moral law (Kant, 2012). In this regard, since Kant insinuated that the highest concept of the extraterrestrial intelligent species may be that of a terrestrial rational being [eines irdischen vernünftigen ]; that implies any encounter with extra-terrestrial intelligent life will compel us under the deontological moral theory to recognize that life as being not fully comprehensible by any human understanding, as being an end in itself, and as being a potential source of moral law (Kant, 2012). It must be realized that Kant’s deontology theory does not go without criticism by critical theorists who believe in dismantling all systems of oppression.

#### 2] Property rights are necessarily universalizable and must support global cosmopolitanism which runs contrary to the appropriation of space.

Walla 16 [Brackets Original. (Alice Pinheiro, Department of Philosophy at Trinity College Dublin) “Common Possession of the Earth and Cosmopolitan Right” Kant-Studien Volume 107 Issue 1, 2016] TDI

In the Doctrine of Right, Kant derives nations’ original community of the land from the fact that the possession of individuals (to which they have an original right), can be thought as a part of a determinate whole. National borders in connection with an internal civil condition make the extent of individual possessions relatively determinate. Borders delineate the scope of individual acquisition in a way which, although not peremptory until the institution of a cosmopolitan condition of distributive justice, is closer to the idea of right than leaving individuals to determine the limits of their acquisition in a wholly unilateral way (as in the state of nature). Unlike Locke, Kant has no theoretical resources for establishing the content (Inhalt) of occupation; the prior occupans must decide according to her own judgment if her possession is being infringed upon and consequently have a conception of the extent of her possession. Only the civil condition is able to provide relatively legitimate conditions for determining the scope of acquisition. This necessity makes Kant’s theory far more dependent on the institutionalization of right than Locke’s theory. The territorial rights of states can thus be understood as a necessary step towards a cosmopolitan condition of distributive justice. As Kant formulates in Perpetual Peace, “cosmopolitan rights shall be limited to the conditions of universal hospitality”. This is a right to offer oneself for commerce (Verkehr) with one another, be the subjects of these rights individuals or nations. As cosmopolitan right makes clear, the idea of common ownership of the earth presents itself under two different modes:(1) as basis of the acquired right of host peoples to their territory, enabling them to decline voluntary interaction, and (2) as the basis for the original right of individual citizens of the world or nations to offer themselves for interaction with foreign nations. In Perpetual Peace Kant called this right “right to visit”, which is neither a right to settle (ius incolatus ) nor to be a guest in the foreign land (kein Gastrecht ). As Kant stresses, host nations retain a right to reject the visitor on the condition that this can be done “without causing his destruction”. Although visitors have no claim to enter the foreign territory, they should not be treated with hostility by the inhabitants, if they behave peacefully. However, the original community of the earth also imposes constraints on the acquired right of host nations to control their borders. Kant makes clear that host nations have the right to reject visitors whenever their reason for interaction is voluntary. Similarly to the original right to a place on the surface of the earth, the right to admission in a foreign territory obtains only under the condition of involuntary occupation of space. Just as the occupation of space by virtue of one’s entry in the world is independent of one’s will, rejecting an involuntary visitor when this would harm or destroy her is incompatible with the original community of the earth. As Kant stresses, in principle no one has more claim to a specific area of the earth than another person. The global distribution of land is thus wholly contingent. Today’s nations can be seen as “permitted” to control a certain territory to the exclusion of others because borders are helpful for determining the extent of individual acquisition, at least within that territory. However, to deny life-saving occupation of space to another being, who is in principle just as entitled as anyone else to any place of the earth would be to contradict the very justification for the territorial rights of states. This is because the permission to control territory and the right of the involuntary visitor to be admitted are based on the same legal foundation or Rechtsgrund, namely, the original community of the earth. Kant could easily have insisted that the acquired right of nations to their territory not only has priority but trumps the original right of persons to occupy space. It is worthy of attention that he did not accept this in the case of involuntary occupation of space. My view is that cosmopolitan right signalizes a contradiction of the right to occupy space with itself under different modalities: on the one hand as the original right of individuals or nations to “be somewhere” (as belonging to the lex iusti) and on the other, the acquired right of peoples to their land (belonging to the lex iuridica). Kant distinguishes between three leges or conditions of justice: lex iusti, lex iuridica and lex iustitiae . The distinction is essential for understanding the relationship between Right as a system of external laws a priori and the subsequent developments of right. As Byrd and Hruschka stressed, the three leges correspond to three categories of modality in the Critique of Pure Reason: possibility (Möglichkeit), reality (Dasein) and necessity (Notwendigkeit ). They can be seen as different “modes” of the same idea of right: original right as the pure rational concept of right (possibility), acquired right as arising from concrete deeds or relations between agents (reality) and peremptory right as legitimized and enforced by a public court of justice (necessity). Although there is a positive development in the transition from the lex iusti, through the lex iuridica, to thelex iustitaedistributivae in the civil condition, the lex iusti is not made superfluous in the civil condition, but is still the source of the normativity, and consequently, of the legitimacy, of all further developments of right. The need for maintaining the compatibility of the development of right with its a priori normative source is what gives rise to cosmopolitan right. In this sense, cosmopolitan right in Kant’s theory has a similar function to the right of necessity in Grotius and imperfect rights and duties in Pufendorf’s theory. They are needed to avoid scenarios which would contradict the rationale for introducing certain rights. While Grotius, following the natural law tradition, appeals to the need of individuals as a basis for the original use right to land and natural resources, Kant does not make the need of individuals the basis of cosmopolitan right. Kant replaces the natural law idea that fundamental needs of human beings provide the content of natural law with the idea of the external exercise of freedom and the impact that unregulated interaction can have for the external freedom of individuals, assuming they have equal juridical status and thus an equal right to non-interference. While Grotius’ right of necessity excuses what would otherwise constitute violations of private property, Kant leaves private property untouched. He restricts himself to limitations to the rights of states to refuse entrants in their territory in case of involuntary occupation of space. Kant does not recognise a right of necessity. As he puts it in the Common Saying, to preserve one’s life is a conditional duty, that is, to be observed if this can be done without injustice (Verbrechen). Although it may seem too inflexible to insist upon the inviolability of private property, property rights are too central in Kant’s legal theory to be compromised. Therefore, the closest Kant comes to imposing limitations on acquired rights is cosmopolitan right. It is important to note how Kant replaces the natural law idea of human fundamental needs with occupation of space. The notion of original communityis used to justifya right to occupy a particular place in the earth. The mere existence of our bodies entails the occupation of a separate area in the world (Separatbesitz), which Kant considers an original right. Original acquisition of space (land) entails acquisition of natural resources, without the appeal to human needs. Further, the kind of community generated by the original right to occupy space is a radically different one from Grotius and Pufendorf. It is constituted by the unity of all potential places individuals can come to occupy on the earth . These potential places are considered disjunctively . Concretely, this means that no one is entitled to any specific area but only to a place on the surface of the earth. Everyone can, in principle, possess this or that place on the earth. The right to occupy a place on the earth is thus a disjunctively universal right(disjunctiv-allgemein). It is therefore only a contingent fact that persons (and consequently nations) have come to occupy a particular place on the earth, for instance, the present territory of France. This contingency plays an important role for Kant’s argument that there is a right to be admitted in case of involuntary interaction. Further, the community of the earth must also be understood as collectively universal (collectiv-allgemein) insofar as it is constituted by the idea of the union of all possible places on the earth . It is therefore not a community in the sense of a joint use of the earth, but a community constituted malgré soi, in virtue of the interconnectedness of all points within the closed spherical surface of the planet. The spatial relations between individuals are what constitute the global community, not God’s gift of the earth to humanity. However, one should not think, as Flikschuh argued, that Kant moved from “the fact of individual acquisition to the idea of original common possession” and thereby “inverted” the natural law sequence from common possession to individual acquisition. This would mean to take the original community to be constituted by empirically given facts. Kant is clear enough that the original community is an idea of reason and not acommunity that was “instituted” (gestiftete Gemeinschaft ). This failure to realize the rational (i.e., original) character of the idea of community of the earth is precisely what Kant takes to be the failure of Grotius’ and Pufendorf’s “primitive community” (uranfängliche Gemeinschaft, communio primaeva ). Kant’s departure from natural law theory is therefore not in an “inversion” of the sequence of ideas, but in his redefinition of central concepts of the natural law in terms of external freedom.

#### Cosmopolitanism through perpetual peace is necessary to escape a state of nature – it prevents the possibility of agency.

Barron 11 [Brackets Original. Anne Barron (Law Department, London School of Economics and Political Science). ”Kant, copyright and communicative freedom.” Law and philosophy. pp. 1- 48. 2011. Accessed 8/22/21. <http://eprints.lse.ac.uk/37521/1/Kant_Copyright_and_Communicative_Freedom_%28lsero%29.pdf> //Xu]

Occupying the first level within Kant’s system of rights is an ‘innate’ right to freedom, borne by human beings conceived of simply as agents: that is, as having recourse to nothing other than their innate means (their own bodily and mental powers) to pursue their ends in the empirical world. 46 It entails a right to use one’s own powers as one sees fit subject to the equivalent right of everyone else (hence, for example, using one’s powers to enslave others is wrongful). For Kant, however, freedom requires that persons also be able to have ‘external objects of choice’ at their disposal. Thus, a second level of Right – private right, regulating persons’ use of these means for pursuing their ends – can be rationally ‘postulated’ as an extension of the innate right to freedom and thereby also of the UPR. Invoking the divisions of Roman private law, Kant presents private right as necessarily reducible to three categories: property rights (subsisting in respect of things), contract rights (subsisting in respect of others’ actions) and what he calls domestic rights (subsisting in respect of other persons as such).47 Private right is however impossible except in “a rightful condition, under an authority giving laws publicly.” 48 Thus the third level in Kant’s system is public right, whereby a public authority exercising legislative, executive and judicial functions can enable private rights to be legitimately acquired, enforced and applied. Kant illustrates the problems arising in a ‘state of nature’ (a condition in which innate rights are insecure, and private rights can apply only provisionally, because of the absence of public right49) through his discussion of what is involved in initially acquiring a property right. This acquisition – though itself an exercise of external freedom – is a unilateral act that purports to exclude all others from the putative object of property, and so compromises the freedom of everyone else by subjecting them to the choice of the acquirer. A state of nature, then, is a condition in which everyone is at all times subject to the unilateral choices of everyone else.50 Since this condition is inconsistent with the possibility of anyone’s agency, a ‘civil’ condition in which individual rights could be endorsed, and rendered secure and determinate, by a public will – a public authority that acts for all – is morally required. Public right in turn has three dimensions. The first (just considered) regulates the relations of citizen-subjects within a state; the second is a system of international right, regulating relations between states; and the third is a system of what Kant calls ‘cosmopolitan’ right, regulating the relations of ‘citizens of the world’ (that is, individuals considered apart from their membership of any state) to foreign states. In the Rechtslehre and in “Toward Perpetual Peace” (an essay published in 1795) Kant defines the content of cosmopolitan right as limited to a ‘right of hospitality:’51 “the right of a foreigner not to be treated with hostility because he has arrived on the land of another.”52 Arguably, however, Kant sees the totality of rightful relations – comprising all three dimensions of public right – as forming a cosmopolitan polity. For Kant, all forms of public law have only provisional validity until such a polity has been established, because only in that event could a condition of war – an international state of nature – be definitively brought to an end in a context of global interdependence.53 “[We] must work toward establishing perpetual peace and the kind of constitution that seems to us most conducive to it (say, a republicanism of all states, together and separately).”54 Involved in Kant’s concept of Right, then, is an idea of progress towards a just political order:55 a global system of reciprocal external freedom, realized through law. The establishment of sovereign states is only the first step towards this end. Central to Kant’s account of how further progress is possible are two interrelated principles: the principle of the independence of every member of each state as a citizen – “that is, as a co-legislator”56 – and the principle of publicity.

#### 3] Space is not subject to property rights – a). It has no physical manifestation as space is by definition the absence of matter which means it cannot be measured, bordered, or divided, thus it cannot be owned b). Owning unexplored planets/space is incoherent – there could be other agents there, and it can’t be deemed an agents property lest agents have a rational conception of it. C) The International Institute of Space Law proves

Sean Blair 2011 is a space journalist and is currently working for the European Space Agency, 08-01-2011, "Space property: who owns it?," BBC Science Focus Magazine, <span class="skimlinks-unlinked">https://www.sciencefocus.com/space/space-property-who-owns-it</span>/

While the deep-sea salvage claim here on Earth appears to show that possession will be sufficient, we’re still to discover exactly what will happen when someone lands a craft on a celestial body with the intention of claiming it, or at least part of it. There are some who believe that regardless of what’s happened on Earth, you simply can’t own something in space. “For us it is clear that private property rights over parts of outer space are not permitted,” says Tanja Masson-Zwaan, President of the International Institute of Space Law. “There is no consensus on property rights in space, as there will always be people who continue to challenge what the law says.”

### Method

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

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

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

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

#### – 1AR theory is the highest layer – the NC has 7 minutes to be abusive and 6 minutes to leverage the abuse against 1A theory in the 2N, making checking abuse lexically impossible

#### 2] Give me new weighing in the 2AR for 1AR shells – I don’t know what arguments will be read in the 2NR so 1AR weighing is impossible as I don’t know what to weigh against.

#### 3] Affirm if I win offense to a counterinterp

#### A] Timeskew – 6 Minute 2NR with collapse to whatever I undercover means that you can win theory and substance, but I need to go for both in half the time and split it between the 2 layers.

#### B] Reciprocity – you get T and theory so I should get theory and an RVI to make the burden reciprocal.

#### 4] Nothing has triggered it, but presumption and permissibility affirm

#### a) We always default to assuming something true until proven false ie if I told you my name is Daniel you would believe me

#### b) Unjust[[1]](#footnote-1) is “not morally right; not fair” and permissibility disproves the positive obligation which is aff ground

#### c) empirics

Shah 19 Sachin “A STATISTICAL ANALYSIS OF SIDE-BIAS ON THE 2019 JANUARY-FEBRUARY LINCOLN-DOUGLAS DEBATE TOPIC” NSD, 15 February 2019. <http://nsdupdate.com/2019/a-statistical-analysis-of-side-bias-on-the-2019-january-february-lincoln-douglas-debate-topic/> SJCP//JG

To further quantify the side-bias, the proportion of negative wins when the affirmative was favored (p1) can be compared with the proportion of affirmative wins when the negative is favored (p2). Ideally the difference between the proportions would be 0; however, p1 = 34.84% while p2 = 28.77, a staggering 6.07% difference. Now the question is whether this difference is statistically significant. In order to determine the answer, a two-proportion z-test was used. The null hypothesis is p1 – p2 = 0 , because that means both sides are able to overcome the debating level skew equally. The alternative hypothesis is then p1 – p2 > 0, meaning the negative is able to overcome the skew more than the affirmative is able, demonstrating a side-bias. This two-proportion z-test rejected the null hypothesis in favor of the alternative (p-value < 0.0001). There is sufficient evidence that the negative is able to overcome the skew more often than the affirmative can. This implies there is a less than 0.01% chance that there is no side-bias because it demonstrates the higher proportion of negative wins when the affirmative is favored is significant. In short, the negative has a greater ability to win difficult rounds than the affirmative does, which indicates there exists a skew in the negative’s favor. This analysis is statistically rigorous and relevant in several aspects: (A) The p-value is less than the alpha. (B) The data is on the current January-February topic, meaning it’s relevant to rounds these months [2]. (C) The data represents a diversity of debating and judging styles across the country. (D) This analysis accounts for disparities in debating skill level. (E) Type I error was reduced by choosing a small alpha level. The combination of these points validates this analysis. As a final note, it is also interesting to look at the trend over multiple topics. In the rounds from 93 TOC bid distributing tournaments (2017 – 2019 YTD), the negative won 52.99% of ballots (p-value < 0.0001) and 54.63% of upset rounds (p-value < 0.0001). This suggests the bias might be structural, and not topic specific, as this data spans six different topics. Therefore, this analysis confirms that affirming is in fact harder again on the 2019 January-February topic [3]. So don’t lose the flip!

#### 5] give both deabtesr 30 speaks

### Adv

#### Commercial Space Industry requires an enormous increase in launches – that causes pollutants and warming.

Gammon 21 Katharine Gammon 7-19-2021 "How the billionaire space race could be one giant leap for pollution" <https://www.theguardian.com/science/2021/jul/19/billionaires-space-tourism-environment-emissions> (I’m an award-winning independent science journalist based in Santa Monica, California. My interests range from culture and nature in public lands to the lives of scientists to the complexity of baby brains. Before I became a professional journalist, I served in the Peace Corps in Bulgaria, and attended MIT and Princeton University.)//Elmer

Last week Virgin Galactic took Richard Branson past the edge of space, roughly 86 km up – part of a new space race with the Amazon billionaire Jeff Bezos, who aims to make a similar journey on Tuesday. Both very wealthy businessmen hope to vastly expand the number of people in space. “We’re here to make space more accessible to all,” said Branson, shortly after his flight. “Welcome to the dawn of a new space age.” Already, people are buying tickets to space. Companies including SpaceX, Virgin Galactic and Space Adventures want to make space tourism more common. The Japanese billionaire Yusaku Maezawa spent an undisclosed sum of money with SpaceX in 2018 for a possible future private trip around the moon and back. And this June, an anonymous space lover paid $28m to fly on Blue Origin’s New Shepard with Bezos – though later backed out due to a “scheduling conflict”. But this launch of a new private space industry that is cultivating tourism and popular use could come with vast environmental costs, says Eloise Marais, an associate professor of physical geography at University College London. Marais studies the impact of fuels and industries on the atmosphere. When rockets launch into space, they require a huge amount of propellants to make it out of the Earth’s atmosphere. For SpaceX’s Falcon 9 rocket, it is kerosene, and for Nasa it is liquid hydrogen in their new Space Launch System. Those fuels emit a variety of substances into the atmosphere, including carbon dioxide, water, chlorine and other chemicals. The carbon emissions from rockets are small compared with the aircraft industry, she says. But they are increasing at nearly 5.6% a year, and Marais has been running a simulation for a decade, to figure out at what point will they compete with traditional sources we are familiar with. “For one long-haul plane flight it’s one to three tons of carbon dioxide [per passenger],” says Marais. For one rocket launch 200-300 tonnes of carbon dioxide are split between 4 or so passengers, according to Marais. “So it doesn’t need to grow that much more to compete with other sources.” Right now, the number of rocket flights is very small: in the whole of 2020, for instance, there were 114 attempted orbital launches in the world, according to Nasa. That compares with the airline industry’s more than 100,000 flights each day on average. But emissions from rockets are emitted right into the upper atmosphere, which means they stay there for a long time: two to three years. Even water injected into the upper atmosphere – where it can form clouds – can have warming impacts, says Marais. “Even something as seemingly innocuous as water can have an impact.” Closer to the ground, all fuels emit huge amounts of heat, which can add ozone to the troposphere, where it acts like a greenhouse gas and retains heat. In addition to carbon dioxide, fuels like kerosene and methane also produce soot. And in the upper atmosphere, the ozone layer can be destroyed by the combination of elements from burning fuels. “While there are a number of environmental impacts resulting from the launch of space vehicles, the depletion of stratospheric ozone is the most studied and most immediately concerning,” wrote Jessica Dallas, a senior policy adviser at the New Zealand Space Agency, in an analysis of research on space launch emissions published last year. Another report from 2019 penned by the Center for Space Policy and Strategy likened the space emissions problem to that of space debris, which the authors say creates an existential risk to the industry. “Today, launch vehicle emissions present a distinctive echo of the space debris problem. Rocket engine exhaust emitted into the stratosphere during ascent to orbit adversely impacts the global atmosphere,” they wrote. “We just don’t know how large the space tourism industry could become,” says Marais. A new market report estimates that the global suborbital transportation and space tourism market is estimated to reach $2.58bn in 2031, growing 17.15% each year of the next decade. “The major driving factor for the market’s robustness will be focused efforts to enable space transportation, emerging startups in suborbital transportation, and increasing developments in low-cost launching sites,” the report says. In the past, most space transportation has been focused on cargo supply missions to the International Space Station and satellite launch services, but currently, this focus has shifted to in-space transportation, planetary explorations, crewed missions, suborbital transportation and space tourism. Several companies, including SpaceX, Blue Origin and Virgin Galactic, have been focusing on developing platforms such as rocket-powered suborbital vehicles that will enable the industry to carry out suborbital transportation and space tourism. People have pointed out that the money these billionaires have poured into space technology could be invested in making life better on our planet, where wildfires, heatwaves and other climate disasters are becoming more frequent as the globe warms up in the climate crisis. “Is anyone else alarmed that billionaires are having their own private space race while record-breaking heatwaves are sparking a ‘fire-breathing dragon of clouds’ and cooking sea creatures to death in their shells?” the former US Labor Secretary Robert Reich tweeted last week. Marais says that there is always an element of excitement to new developments in space – but it’s still possible to be responsible while doing something exciting. She urges caution as the space tourism industry grows, and says there are currently no international rules around the kinds of fuels used and their impact on the environment. “We have no regulations currently around rocket emissions,” she says. “The time to act is now – while the billionaires are still buying their tickets.”

#### Status Quo Launches are goldilocks, but Commercialization increases it ten-fold which overwhelms alt-causes – specifically decks the Ozone Layer.

Marais 21 Eloise Marais 7-19-2021 "Space tourism: rockets emit 100 times more CO₂ per passenger than flights – imagine a whole industry" <https://theconversation.com/space-tourism-rockets-emit-100-times-more-co-per-passenger-than-flights-imagine-a-whole-industry-164601> (Associate Professor in Physical Geography, UCL)//Elmer

The commercial race to get tourists to space is heating up between Virgin Group founder Sir Richard Branson and former Amazon CEO Jeff Bezos. On Sunday 11 July, Branson ascended 80 km to reach the edge of space in his piloted Virgin Galactic VSS Unity spaceplane. Bezos’ autonomous Blue Origin rocket is due to launch on July 20, coinciding with the anniversary of the Apollo 11 Moon landing. Though Bezos loses to Branson in time, he is set to reach higher altitudes (about 120 km). The launch will demonstrate his offering to very wealthy tourists: the opportunity to truly reach outer space. Both tour packages will provide passengers with a brief ten-minute frolic in zero gravity and glimpses of Earth from space. Not to be outdone, Elon Musk’s SpaceX will provide four to five days of orbital travel with its Crew Dragon capsule later in 2021. What are the environmental consequences of a space tourism industry likely to be? Bezos boasts his Blue Origin rockets are greener than Branson’s VSS Unity. The Blue Engine 3 (BE-3) will launch Bezos, his brother and two guests into space using liquid hydrogen and liquid oxygen propellants. VSS Unity used a hybrid propellant comprised of a solid carbon-based fuel, hydroxyl-terminated polybutadiene (HTPB), and a liquid oxidant, nitrous oxide (laughing gas). The SpaceX Falcon series of reusable rockets will propel the Crew Dragon into orbit using liquid kerosene and liquid oxygen. Burning these propellants provides the energy needed to launch rockets into space while also generating greenhouse gases and air pollutants. Large quantities of water vapour are produced by burning the BE-3 propellant, while combustion of both the VSS Unity and Falcon fuels produces CO₂, soot and some water vapour. The nitrogen-based oxidant used by VSS Unity also generates nitrogen oxides, compounds that contribute to air pollution closer to Earth. Roughly two-thirds of the propellant exhaust is released into the stratosphere (12 km-50 km) and mesosphere (50 km-85 km), where it can persist for at least two to three years. The very high temperatures during launch and re-entry (when the protective heat shields of the returning crafts burn up) also convert stable nitrogen in the air into reactive nitrogen oxides. These gases and particles have many negative effects on the atmosphere. In the stratosphere, nitrogen oxides and chemicals formed from the breakdown of water vapour convert ozone into oxygen, depleting the ozone layer which guards life on Earth against harmful UV radiation. Water vapour also produces stratospheric clouds that provide a surface for this reaction to occur at a faster pace than it otherwise would. Space tourism and climate change Exhaust emissions of CO₂ and soot trap heat in the atmosphere, contributing to global warming. Cooling of the atmosphere can also occur, as clouds formed from the emitted water vapour reflect incoming sunlight back to space. A depleted ozone layer would also absorb less incoming sunlight, and so heat the stratosphere less. Figuring out the overall effect of rocket launches on the atmosphere will require detailed modelling, in order to account for these complex processes and the persistence of these pollutants in the upper atmosphere. Equally important is a clear understanding of how the space tourism industry will develop. Virgin Galactic anticipates it will offer 400 spaceflights each year to the privileged few who can afford them. Blue Origin and SpaceX have yet to announce their plans. But globally, rocket launches wouldn’t need to increase by much from the current 100 or so performed each year to induce harmful effects that are competitive with other sources, like ozone-depleting chlorofluorocarbons (CFCs), and CO₂ from aircraft. During launch, rockets can emit between four and ten times more nitrogen oxides than Drax, the largest thermal power plant in the UK, over the same period. CO₂ emissions for the four or so tourists on a space flight will be between 50 and 100 times more than the one to three tonnes per passenger on a long-haul flight. In order for international regulators to keep up with this nascent industry and control its pollution properly, scientists need a better understanding of the effect these billionaire astronauts will have on our planet’s atmosphere.

#### unregulated commercialization triples debris and renders satellites unusable.

Fabian 19 (Christopher; January 2019; B.S. from the United States Air Force Academy, thesis submitted in partial fulfillment of the requirements for a M.S. from the University of North Dakota, approved by the Faculty Advisory Committee and in coordination with Dr. Michael Dodge, David Kugler, and Brian Urlacher; University of North Dakota Scholarly Commons, “A Neoclassical Realist’s Analysis Of Sino-U.S. Space Policy,” <https://commons.und.edu/theses/2455/>)

b. Defect/Defect The ubiquity of space technology has also yielded the negative externality of overcrowding the space domain. Despite its seemingly unlimited size, there are a limited number of useful earth-centric orbits to optimize terrestrial coverage. It is projected that there are over 300,000 medium sized objects capable of causing catastrophic failure of a satellite upon collision currently in earth’s orbit.159 Of these objects, 20,000 are actively tracked by the comparatively robust space surveillance network (SSN) of the United States Air Force, only 1,000 are active payloads, and even fewer have maneuver capability.160 Recent trends indicate that the problem of orbital congestion will only worsen in the coming decades as the barriers to entry are reduced. Launch service cost is rapidly decreasing due to an increased number of service providers and technology revolutions such as reusable rockets. Also, the miniaturization and simplification of satellite payloads further reduces the cost and infrastructure needed to be a spacefairing nation.161 This is evidenced by the near doubling of state operated satellites from 27 in 2000 to over 50 in 2012, coupled with a near doubling in total space objects from 1997 to 2007.162 The accumulation of space debris is a vital concern to the sustainable development of the space environment due to the increased probability of conjunction between active payloads and all other objects that results from crowded orbits. This increase in collision probability occurs proportionally to the number of objects in a given orbital domain. The tripling of orbital debris projected to occur in the next century, due to routine use and accumulation alone, would cause a tenfold increase in the probability of collision. In the event of a catastrophic collision between two objects, the resulting debris cloud could cause a cascading effect. Each successive collision increases the probability of another occurrence in a given orbit until an instability threshold is reached. At this threshold, debris removal due to decay would be negligible compared to debris created by subsequent collisions. As the propagation of debris continues, the cost of launching a satellite would eventually outweigh the benefits received due to the probability of that asset being destroyed by errant debris, effectively rendering the given orbit unusable. This debris propagation model and the dangers associated with it are colloquially referred to as the Kessler Syndrome. Kessler asserts unstable regions of low earth orbit (LEO) currently exist and that, barring the addition of more debris, a major collision would occur once every 10-20 years. If debris doubles, as it has in the last decade, the collision rate would increase to 2.5 years. Although most models’ time scales are on the order of centuries, it is widely accepted that the current rate of debris accumulation will render critical orbits unusable unless immediate measures are taken to return stability.163 There is near universal acceptance of the danger space debris presents, yet little substantive action has been taken to solve the problem. Current debris accumulation and propagation models show that earth orbiting domains are finite resources. Continued unsustainable development moving forward may preclude future usage, making earth orbits rivalrous goods.164 Furthermore, orbital domains are made a non-excludable good by the OST which states, “Outer space… shall be free for exploration and use by all States without discrimination of any kind.”165 As a non-excludable public good, space succumbs to the tragedy of the commons where the privately beneficial strategy of space utilization differs significantly from the socially optimal strategy promoting orbital stability.166 Understandably, most analysis has focused on solving the problem of orbital instability by addressing the market failure responsible for debris creation. The current reasoning suggests that if actors creating space debris internalize the cost of their actions, a solution can arise. Proposed solutions run the gamut of ideologies from free market tax incentives, to command and control legislation, to restructuring orbital property rights. Scientific solutions have also been proposed, but technological feasibility and cost remain major problems. Furthermore, analogous environments susceptible to the tragedy of the commons have been examined in hopes that they may prove applicable to the problem of orbit instability.167 This analysis is ultimately useful if the problem is to be solved under nominal conditions, but there is an underlying problem that needs to be addressed before any of these proposed solutions can realistically be enacted.

#### Debris causes ecological destruction because of environmental contamination.

Stockwell 20 [Samuel Stockwell (Research Project Manager, the Annenberg Institute at Brown University). “Legal ‘Black Holes’ in Outer Space: The Regulation of Private Space Companies”. E-International Relations. Jul 20 2020. Accessed 12/7/21. <https://www.e-ir.info/2020/07/20/legal-black-holes-in-outer-space-the-regulation-of-private-space-companies/> //Xu]

Space debris can be defined as non-purposeful man-made objects that reside in space; made up of inactive parts from former space operations and fragmentations of spacecraft, there are nearly 30,000 pieces of debris in the Earth’s orbit (Pellegrino & Stang, 2016: 25). Despite most debris being centimetres or millimetres in size satellites often travel at the speed of a bullet, meaning that a collision between the two could be catastrophic in terms of environmental, mechanical and financial damage (Black & Butt, 2010: 1). Since the development of the Kessler Syndrome thesis in 1978 – which predicted that space debris may become so dense as to trigger a chain reaction of major collisions – space debris is considered more of a threat to security operations in the near-term than military space activity (Quintana, 2017: 95). Difficulty over determining whether a collision was accidental or a purposeful act further exacerbates this problem, given that “every object in orbit is a threat to everything else in orbit, regardless of its intended function” (Faith, 2012: 86). Such developments have led to the US administration increasingly adopting a securitisation discourse around orbital debris (Bowen, 2014: 47), which may cause concerns as to whether policymakers may react to future American satellite collisions in a militarised manner. A number of NewSpace actors are likely to complicate these worries even further through recent satellite proposals. Whilst Boeing is proposing a constellation of up to 3,000 satellites, SpaceX has even grander goals of creating a constellation consisting of 4,425 satellites, eventually expanding to 12,000 satellites in the near-future (Kosiak, 2019: 7). Putting this into context, there are currently just around 1,400 active satellites in orbit around the Earth, highlighting the scale of these projects. The collision between a single US privately-owned Iridium satellite and state-owned Russian Cosmos satellite in 2009 underscored not only the sheer amount of debris caused by these collisions – over 1,500 pieces – but also foreshadowed the possible geopolitical tensions that may arise from them (Wang, 2010: 87-88). Given the number of various commercial satellite constellations possibly going into orbit in the near-future, this raises questions over the possibly devastating security hazards they could pose once in orbit or when they eventually become defunct. Yet the proliferation of these commercial satellite plansalso pose significant environmental issues. Article IX of the OST asserts that: “States shall pursue activities of outer space in a manner that avoids any harmful contamination or adverse environmental changes on Earth” (UN, 1967). However, the use of terms like ‘harmful’ or ‘adverse change’ underscores the lack of specificity over what exactly constitutes environmental damage, or for whom it must refrain from harming. There is also a failure to address the explicit problem of space debris since the discourse is primarily concentrated on chemical effluent pollution, undermining attempts to facilitate the removal of floating wreckage(Gupta, 2016: 26). The inability of the OST to properly promote environmental considerations in space has been mirrored in the NewSpace community, where there has been a woeful lack of ecological consideration: “The hundreds of articles and books on outer space resource development seldom mention that such actions may adversely affect the environment in ways that will potentially disadvantage their enterprises and the humans that will be required to implement them” (Kramer, 2017: 136). Such images evoke the types of difficulties that private firms have encountered on Earth reconciling capital with the environment in a way that doesn’t damage profit margins (Magdoff & Foster, 2011: 61-66). Yet in doing so, this neglect is only likely to result in the proliferation of extra-terrestrial debris that the UN OST failed to address. Indeed, despite its vastness there is only a narrow region of orbital space that is either useable or beneficial for prolonged human missions (Brearley, 2005: 2), meaning that the increase in space debris from these massive commercial satellite constellations will likely be at the detriment of developing nations who have yet fostered spacefaring capabilities. Elon Musk’s SpaceX company has already caused complications for Earth-bound astrologists. The brightness of his recent ‘Starlink’ satellite constellation system in comparison to other satellites has been obscuring telescopic images (see Grush, 2020). More concerningly, Starlink may be much more visible during twilight hours which could be problematic in identifying potentially hazardous asteroids in a timely manner (The Verge, 2020). In this sense, whilst private space entrepreneurs are able to increase their profitability from being able to establish constellations, such endeavours are spoiling the scientific work of researchers on Earth that may complicate the monitoring of Earth-based asteroid impacts.

#### Warming causes Extinction

Kareiva 18, Peter, and Valerie Carranza. "Existential risk due to ecosystem collapse: Nature strikes back." Futures 102 (2018): 39-50. (Ph.D. in ecology and applied mathematics from Cornell University, director of the Institute of the Environment and Sustainability at UCLA, Pritzker Distinguished Professor in Environment & Sustainability at UCLA)//Re-cut by Elmer

In summary, six of the nine proposed planetary boundaries (phosphorous, nitrogen, biodiversity, land use, atmospheric aerosol loading, and chemical pollution) are unlikely to be associated with existential risks. They all correspond to a degraded environment, but in our assessment do not represent existential risks. However, the three remaining boundaries (**climate change**, global **freshwater** cycle, **and** ocean **acidification**) do **pose existential risks**. This is **because of** intrinsic **positive feedback loops**, substantial lag times between system change and experiencing the consequences of that change, and the fact these different boundaries interact with one another in ways that yield surprises. In addition, climate, freshwater, and ocean acidification are all **directly connected to** the provision of **food and water**, and **shortages** of food and water can **create conflict** and social unrest. Climate change has a long history of disrupting civilizations and sometimes precipitating the collapse of cultures or mass emigrations (McMichael, 2017). For example, the 12th century drought in the North American Southwest is held responsible for the collapse of the Anasazi pueblo culture. More recently, the infamous potato famine of 1846–1849 and the large migration of Irish to the U.S. can be traced to a combination of factors, one of which was climate. Specifically, 1846 was an unusually warm and moist year in Ireland, providing the climatic conditions favorable to the fungus that caused the potato blight. As is so often the case, poor government had a role as well—as the British government forbade the import of grains from outside Britain (imports that could have helped to redress the ravaged potato yields). Climate change intersects with freshwater resources because it is expected to exacerbate drought and water scarcity, as well as flooding. Climate change can even impair water quality because it is associated with heavy rains that overwhelm sewage treatment facilities, or because it results in higher concentrations of pollutants in groundwater as a result of enhanced evaporation and reduced groundwater recharge. **Ample clean water** is not a luxury—it **is essential for human survival**. Consequently, cities, regions and nations that lack clean freshwater are vulnerable to social disruption and disease. Finally, ocean acidification is linked to climate change because it is driven by CO2 emissions just as global warming is. With close to 20% of the world’s protein coming from oceans (FAO, 2016), the potential for severe impacts due to acidification is obvious. Less obvious, but perhaps more insidious, is the interaction between climate change and the loss of oyster and coral reefs due to acidification. Acidification is known to interfere with oyster reef building and coral reefs. Climate change also increases storm frequency and severity. Coral reefs and oyster reefs provide protection from storm surge because they reduce wave energy (Spalding et al., 2014). If these reefs are lost due to acidification at the same time as storms become more severe and sea level rises, coastal communities will be exposed to unprecedented storm surge—and may be ravaged by recurrent storms. A key feature of the risk associated with climate change is that mean annual temperature and mean annual rainfall are not the variables of interest. Rather it is extreme episodic events that place nations and entire regions of the world at risk. These extreme events are by definition “rare” (once every hundred years), and changes in their likelihood are challenging to detect because of their rarity, but are exactly the manifestations of climate change that we must get better at anticipating (Diffenbaugh et al., 2017). Society will have a hard time responding to shorter intervals between rare extreme events because in the lifespan of an individual human, a person might experience as few as two or three extreme events. How likely is it that you would notice a change in the interval between events that are separated by decades, especially given that the interval is not regular but varies stochastically? A concrete example of this dilemma can be found in the past and expected future changes in storm-related flooding of New York City. The highly disruptive flooding of New York City associated with Hurricane Sandy represented a flood height that occurred once every 500 years in the 18th century, and that occurs now once every 25 years, but is expected to occur once every 5 years by 2050 (Garner et al., 2017). This change in frequency of extreme floods has profound implications for the measures New York City should take to protect its infrastructure and its population, yet because of the stochastic nature of such events, this shift in flood frequency is an elevated risk that will go unnoticed by most people. 4. The combination of positive feedback loops and societal inertia is fertile ground for global environmental catastrophes **Humans** are remarkably ingenious, and **have adapted** to crises **throughout** their **history**. Our doom has been repeatedly predicted, only to be averted by innovation (Ridley, 2011). **However**, the many **stories** **of** human ingenuity **successfully** **addressing** **existential risks** such as global famine or extreme air pollution **represent** environmental c**hallenges that are** largely **linear**, have immediate consequences, **and operate without positive feedbacks**. For example, the fact that food is in short supply does not increase the rate at which humans consume food—thereby increasing the shortage. Similarly, massive air pollution episodes such as the London fog of 1952 that killed 12,000 people did not make future air pollution events more likely. In fact it was just the opposite—the London fog sent such a clear message that Britain quickly enacted pollution control measures (Stradling, 2016). Food shortages, air pollution, water pollution, etc. send immediate signals to society of harm, which then trigger a negative feedback of society seeking to reduce the harm. In contrast, today’s great environmental crisis of climate change may cause some harm but there are generally long time delays between rising CO2 concentrations and damage to humans. The consequence of these delays are an absence of urgency; thus although 70% of Americans believe global warming is happening, only 40% think it will harm them (http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/). Secondly, unlike past environmental challenges, **the Earth’s climate system is rife with positive feedback loops**. In particular, as CO2 increases and the climate warms, that **very warming can cause more CO2 release** which further increases global warming, and then more CO2, and so on. Table 2 summarizes the best documented positive feedback loops for the Earth’s climate system. These feedbacks can be neatly categorized into carbon cycle, biogeochemical, biogeophysical, cloud, ice-albedo, and water vapor feedbacks. As important as it is to understand these feedbacks individually, it is even more essential to study the interactive nature of these feedbacks. Modeling studies show that when interactions among feedback loops are included, uncertainty increases dramatically and there is a heightened potential for perturbations to be magnified (e.g., Cox, Betts, Jones, Spall, & Totterdell, 2000; Hajima, Tachiiri, Ito, & Kawamiya, 2014; Knutti & Rugenstein, 2015; Rosenfeld, Sherwood, Wood, & Donner, 2014). This produces a wide range of future scenarios. Positive feedbacks in the carbon cycle involves the enhancement of future carbon contributions to the atmosphere due to some initial increase in atmospheric CO2. This happens because as CO2 accumulates, it reduces the efficiency in which oceans and terrestrial ecosystems sequester carbon, which in return feeds back to exacerbate climate change (Friedlingstein et al., 2001). Warming can also increase the rate at which organic matter decays and carbon is released into the atmosphere, thereby causing more warming (Melillo et al., 2017). Increases in food shortages and lack of water is also of major concern when biogeophysical feedback mechanisms perpetuate drought conditions. The underlying mechanism here is that losses in vegetation increases the surface albedo, which suppresses rainfall, and thus enhances future vegetation loss and more suppression of rainfall—thereby initiating or prolonging a drought (Chamey, Stone, & Quirk, 1975). To top it off, overgrazing depletes the soil, leading to augmented vegetation loss (Anderies, Janssen, & Walker, 2002). Climate change often also increases the risk of forest fires, as a result of higher temperatures and persistent drought conditions. The expectation is that **forest fires will become more frequent** and severe with climate warming and drought (Scholze, Knorr, Arnell, & Prentice, 2006), a trend for which we have already seen evidence (Allen et al., 2010). Tragically, the increased severity and risk of Southern California wildfires recently predicted by climate scientists (Jin et al., 2015), was realized in December 2017, with the largest fire in the history of California (the “Thomas fire” that burned 282,000 acres, https://www.vox.com/2017/12/27/16822180/thomas-fire-california-largest-wildfire). This **catastrophic fire** embodies the sorts of positive feedbacks and interacting factors that **could catch humanity off-guard and produce a** true **apocalyptic event.** Record-breaking rains produced an extraordinary flush of new vegetation, that then dried out as record heat waves and dry conditions took hold, coupled with stronger than normal winds, and ignition. Of course the record-fire released CO2 into the atmosphere, thereby contributing to future warming. Out of all types of feedbacks, water vapor and the ice-albedo feedbacks are the most clearly understood mechanisms. Losses in reflective snow and ice cover drive up surface temperatures, leading to even more melting of snow and ice cover—this is known as the ice-albedo feedback (Curry, Schramm, & Ebert, 1995). As snow and ice continue to melt at a more rapid pace, millions of people may be displaced by flooding risks as a consequence of sea level rise near coastal communities (Biermann & Boas, 2010; Myers, 2002; Nicholls et al., 2011). The water vapor feedback operates when warmer atmospheric conditions strengthen the saturation vapor pressure, which creates a warming effect given water vapor’s strong greenhouse gas properties (Manabe & Wetherald, 1967). Global warming tends to increase cloud formation because warmer temperatures lead to more evaporation of water into the atmosphere, and warmer temperature also allows the atmosphere to hold more water. The key question is whether this increase in clouds associated with global warming will result in a positive feedback loop (more warming) or a negative feedback loop (less warming). For decades, scientists have sought to answer this question and understand the net role clouds play in future climate projections (Schneider et al., 2017). Clouds are complex because they both have a cooling (reflecting incoming solar radiation) and warming (absorbing incoming solar radiation) effect (Lashof, DeAngelo, Saleska, & Harte, 1997). The type of cloud, altitude, and optical properties combine to determine how these countervailing effects balance out. Although still under debate, it appears that in most circumstances the cloud feedback is likely positive (Boucher et al., 2013). For example, models and observations show that increasing greenhouse gas concentrations reduces the low-level cloud fraction in the Northeast Pacific at decadal time scales. This then has a positive feedback effect and enhances climate warming since less solar radiation is reflected by the atmosphere (Clement, Burgman, & Norris, 2009). The key lesson from the long list of potentially positive feedbacks and their interactions is that **runaway climate change,** and runaway perturbations have to be taken as a serious possibility. Table 2 is just a snapshot of the type of feedbacks that have been identified (see Supplementary material for a more thorough explanation of positive feedback loops). However, this list is not exhaustive and the possibility of undiscovered positive feedbacks **portends** even greater **existential risks**. The many environmental crises humankind has previously averted (famine, ozone depletion, London fog, water pollution, etc.) were averted because of political will based on solid scientific understanding. We cannot count on complete scientific understanding when it comes to positive feedback loops and climate change.

#### It's the most probable scenario for Extinction – you can’t negotiate with the environment.

Wagner and Weitzman 15 (Gernot Wagner, Ph.D. Student in Political Economy and Government, Harvard University & Martin Weitzman Professor of Economics at Harvard University, “How does climate stack up against other worst-case scenarios?”, Excerpt from “Climate Shock”)

What then, if anything, still distinguishes climate change from the others remaining: biotechnology, nanotechnology, nukes and pandemics? For one, the relatively high chance of eventual planetary catastrophe. In Climate Shock, we zero in on eventual average global warming of 6°C (11°F) as the final cutoff few would doubt represents a true planetary catastrophe. Higher temperatures are beyond anyone’s grasp. Yet our current path doesn’t exclude eventual average global warming above 6°C. In fact, our own analysis puts the likelihood at around 10 percent, and that’s for an indisputable global catastrophe. Climate change would trigger plenty of catastrophic events with temperatures rising by much less than 6°C. Many scientists would name 2°C (3.6°F) as the threshold, and we are well on our way to exceeding that, unless there is a major global course correction. Second, the gap between our current efforts and what’s needed on climate change is enormous. We are no experts on any of the other worst-case scenarios, but there at least it seems like much is already being done. Take nuclear terrorism. The United States alone spends many hundreds of billions of dollars each year on its military, intelligence and security services. That doesn’t stamp out the chance of terrorism. Some of the money spent may even be fueling it, and there are surely ways to approach the problem more strategically at times, but at least the overall mission is to protect the United States and its citizens. It would be hard to argue that U.S. climate policy today benefits from anything close to this type of effort. As for mitigating pandemics, more could surely be spent on research, monitoring and rapid response, but here too it seems like needed additional efforts would plausibly amount to a small fraction of national income. Third, climate change has firm historical precedence. There’s ample reason to believe that pumping carbon dioxide into the atmosphere is reliving the past — the distant past, but the past nonetheless. The planet has seen today’s carbon dioxide levels before: over 3 million years ago, with sea levels some 20 meters higher than today, and camels roaming the high Arctic. There are considerable uncertainties in all of this, but there’s little reason to believe that humanity can cheat basic physics and chemistry. Contrast the historical precedent of climate change with that of biotechnology, or rather the lack of it. The fear that bioengineered genes and genetically modified organisms will wreak havoc in the wild is a prime example. They may act like invasive species in some areas, but a global takeover seems unlikely, to say the least. Much like climate change, historical precedent can give us some guidance. But unlike climate change, that same historical precedent gives us quite a bit of comfort. Nature itself has tried for millions of years to create countless combinations of mutated DNA and genes. The process of natural selection all but guarantees that only a tiny fraction of the very fittest permutations has survived. Genetically modified crops grow bigger and stronger and are pesticideresistant. But they can’t outgrow natural selection entirely. None of that yet guarantees that scientists wouldn’t be able to develop permutations that could wreak havoc in the wild, but historical experience would tell us that the chance is indeed slim. In fact, the best scientists working on biotechnology seem to be much less concerned about the dangers of “Frankenfoods” and GMOs than the general public. The reverse holds true for climate change. The best climate scientists appear to be significantly more concerned about ultimate climate impacts than the majority of the general public and many policy makers. That alone should give us pause.

1. https://dictionary.cambridge.org/us/dictionary/english/unjust

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