## 1AC

### Metaethic

#### The metaethic is pluralism or the idea that differing views of ethics are valid,

#### 1] Empirics- Best studies prove pluralistic tendencies are inevitable

Polzler and Wright 19[Thomas Pölzler and Jennifer Cole Wright- “Empirical research on folk moral objectivism” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6686698/> NCBI. Published July 5th 2019]

Examining these studies' results more closely, however, makes it less clear whether this interpretation is appropriate (Pölzler, 2018b). Take again Goodwin and Darley's study. In this study, almost 30% of subjects' responses to the disagreement measure and almost 50% of their responses to the truth‐aptness measure fell on the option that the researchers took to be indicative of subjectivism (Goodwin & Darley, 2008, pp. 1347, 1351). Moreover, while some moral statements were dominantly classified as objective (e.g., the above statement about robbery), many others were dominantly classified as nonobjective (e.g., the stem cell research statement). This suggests that subjects in Goodwin and Darley's study may have actually favored what Wright, Grandjean, and McWhite (2013) called “metaethical pluralism,” i.e., they sometimes sided with objectivism and other times with nonobjectivism. More recent studies have by and large confirmed this hypothesis of folk metaethical pluralism. Wright et al. (2013) and Wright, McWhite, and Grandjean (2014), for example, replicated Goodwin and Darley's results, using the exact same measures, but letting subjects classify the presented statements as moral and nonmoral themselves. Objectivity ratings for statements that were dominantly self‐classified as moral varied between as little as 5% and as much as 85%. Research based on different measures yielded high proportions of intrapersonal variation as well (e.g., Beebe, 2014; Beebe, Qiaoan, Wysocki, & Endara, 2015; Beebe & Sackris, 2016; Fisher, Knobe, Strickland, & Keil, 2017; Goodwin & Darley, 2012; Heiphetz & Young, 2017; Wright, 2018; Zijlstra, forthcoming.

#### Emperics O/W they are the only verifiable metric and take into account all conditions.

#### 2] Resolvability – Thousands of years of unresolved debates over ethics are on our side. It’s unlikely a 45 minute debate can come to a useful truth.

### Framing

#### Meaning only has value in a frame of reference when it is practical to the individual, James 2K

James, William [William James was an American philosopher, historian, and psychologist, and the first educator to offer a psychology course in the United States.], and Giles B. Gunn. Pragmatism and Other Writings. New York: Penguin Books, 2000. Print.

A glance at the history of the idea will show you still better what pragmatism means. The term is derived from the same Greek word , meaning action, from which our words ‘practice’ and ‘practical’ come. It was first introduced into philosophy by Mr. Charles Peirce in 1878. In an article entitled ‘How to Make Our Ideas Clear,’ in the ‘Popular Science Monthly’ for January of that year,1 Mr. Peirce, after pointing out that our beliefs are really rules for action, said that, to develop a thought’s meaning, we need only determine what conduct it is fitted to produce: that conduct is for **us** its sole significance. And the tangible fact at the root of all our thought-distinctions, however subtle, is that there is no one of them so fine as to consist in anything but a possible difference of practice. To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve — what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object, so far as that conception has positive significance at all. This is the principle of Peirce, the principle of pragmatism. It lay entirely unnoticed by any one for twenty years, until I, in an address before Professor Howison’s philosophical union at the university of California, brought it forward again and made a special application of it to religion.34 By that date (1808) the times seemed ripe for its reception. The word ‘pragmatism’ spread, and at present It fairly spots the pages of the philosophic journals. On all hands we find the ‘pragmatic movement’ spoken of, sometimes with respect, sometimes with contumely, seldom with clear understanding. It is evident that the term applies itself conveniently to a number of tendencies that hitherto have lacked a collective name, and that it has ‘come to stay.’ To take in the importance of Peirce’s principle, one must get accustomed to applying it to concrete cases. I found a few years ago that Ostwald, the illustrious Leipzig chemist, had been making perfectly distinct use of the principle of pragmatism in his lectures on the philosophy of science; though he had not called it by that name.35 “All realities influence our practice,” he wrote me, “and that influence is their meaning for us. I am accustomed to put questions to my classes in this way: In what respects would the world be different if this alternative or that were true? If I can find nothing that would become different, then the alternative has no sense.” That is, the rival views mean practically the same thing, and meaning, other than practical, there is for us none. Ostwald in a published lecture gives this example of what he means. Chemists have long wrangled over the inner constitution of certain bodies called ‘tautomerous.’ Their properties seemed equally consistent with the notion that an instable hydrogen atom oscillates inside of them, or that they are instable mixtures of two bodies. Controversy raged, but never was decided. “It would never have begun,” says Ostwald, “if the combatants had asked themselves what particular experimental fact could have been made different by one or the other view being correct. For it would then have appeared that no difference of fact could possibly ensue; and the quarrel was as unreal as if, theorizing in primitive times about the raising of dough by yeast, one party should have invoked a ‘brownie,’ while another insisted on an ‘elf’ as the true cause of the phenomenon.2 It is astonishing to see how many philosophical disputes collapse into insignificance the moment you subject them to this simple test of tracing a concrete consequence. There can be no difference anywhere that doesn’t make a difference elsewhere — no difference in abstract truth that doesn’t express itself in a difference in concrete fact and in conduct consequent upon that fact, imposed on somebody, somehow, somewhere, and somewhen. The whole function of philosophy ought to be to find out what definite difference it will make to you and me, at definite instants of our life, if this world-formula or that world-formula be the true one. There is absolutely nothing new in the pragmatic method. Socrates was an adept at it.37 Aristotle used it methodically. 38Locke, Berkeley,39and Hume4041made momentous contributions to truth by its means. Shadworth Hodgson keeps insisting that realities are only what they are ‘known as.’ But these forerunners of pragmatism used it in fragments: they were preluders only. Not until in our time has it generalized itself, become conscious of a universal mission, pretended to a conquering destiny. I believe in that destiny, and I hope I may end by inspiring you with my belief.

#### Thus deliberation must be used for moral inquiry, Misak 99

Misak, C. J. (Cheryl J.) [Cheryl J. Misak FRSC is a Canadian philosopher who works in pragmatism, the history of analytic philosophy, and bioethics. She is a University Professor at the University of Toronto, a Fellow of the Royal Society of Canada, and a recipient of a Guggenheim Fellowship in intellectual and cultural history.], “Truth, politics, morality: pragmatism and deliberation”, 1999, https://philpapers.org/rec/MISTPM-4

Pragmatism, I have suggested, can offer such protection. Unlike noncognitivism, it does provide the theoretical wherewithal to think that one’s reasons are more than just what one happens to think. For a judgement aims at being true, where being true amounts to being the belief which would best fit with reasons and experience. And pragmatism provides the theoretical wherewithal to criticise others. For a methodological principle has been justified: engaging in genuine moral inquiry – searching for principles and for particular judgements which will not be susceptible to recalcitrant experience and argument – requires that we take our beliefs to be responsive to new arguments and sensibilities about what is good, cruel, kind, oppressive, worthwhile, or just. Those who neglect or denigrate the experiences of others because of their gender, skin colour, or sexual orientation are adopting a very bad means for arriving at true and rational beliefs. They can be criticised as failing to aim at truth properly. This methodological criticism will come into play in relatively few cases. The project is not to derive the whole of morals and politics from a general and proven principle. The methodological point is not a fountain from which all policy must flow, although it supports a certain direction for policy, rich and possibly radical. For the most part, moral debate will be conducted in the usual way, with reasons offered of the sort: that someone fails to see how much pain she is causing; that lying to a person in order to get what you want is treating him as a means to an end and that this is an inappropriate way to treat a person; that keeping a class oppressed in order to maintain a luxurious lifestyle indicates a perverse ordering of the importance of various needs, and so on. That is, once the pragmatist/cognitivist ethics is up and running, there will be countless familiar principles which will provide grounds of justification and criticism. But these principles will not have the general justification that the methodological principle enjoys. Their justifications will be even more low profile and fallible. Agreement on this or that issue must always be taken to be possibly wrong, for we do not know that inquiry or debate has been pursued as far as it could go. We have seen that not even the methodological principle should pretend that it is necessarily true and this holds even more sharply for the first-order principles. But the fact that our judgements are fallible does not mean that the arguments for them are weak. We can have good reasons to think that a way of life, a conception of the good, a comprehensive doctrine, a religious commitment, a norm of behaviour, an ideal of virtue, a kind of character, a Moral deliberation 105 cultural value, or a recommendation for action in a particular context is right or wrong. It is clearly crucial for the pragmatist theory that wanting to get the truth is something which cuts across whatever divides us from others. Luckily for that theory, we are indeed hard pressed to find opponents in our moral and political lives who do not assert or believe or claim that their position is true, or best, or that which ought to be enforced. This is all we need in order to see them as participating in inquiry and all we need in order to see them as bound to the minimal requirement of taking experience seriously. Once our Schmittian and other illiberal opponents are brought into the epistemic fold, they can be criticised as failing to really hold beliefs – things which are responsive to reasons. For they refuse to take the reasons of all seriously. So despite the fact that the pragmatist’s methodology is sparse and is something that is relatively easy to accept, it gives us what Habermas wants and what everyone should want – critical bite. And despite the fact that the pragmatist says that we must start our theory with ongoing practice, that theory can provide us with a guide for future practice. We can debate substantive moral issues and, over and above the first-order criticisms which we will level, we are guided by a methodological normative principle. An inquirer can fail to aim at truth, can fail to hold genuine beliefs or genuine assertions, or he can follow a method that is unlikely to get him true beliefs. The first-order reasons we may invoke for or against some proposal are not reducible to the second-order reasons – to the epistemological arguments about truth and inquiry. The epistemological arguments tell us what it is to have a belief which aims at truth, moral belief being a special case of that general type (a case where arguments about the rightness of respecting others happen to take primacy of place). The first-order reasons will be about moral properties, such as the fair distribution of resources and how we ought to treat others when we interact personally with them. It is the first-order reasons which will constantly come into play in our ethical and political lives, unlike the epistemological reasons. And there will be plenty of first-order reasoning which bears on the question of whether we ought to treat the experience of others with respect. But that does not damage the point that the epistemological arguments give us something additional to the first-order reasons to say to ourselves about why and how we can criticise those who denigrate the experiences of others. It does not damage the point that the epistemological arguments give additional weight or justification to the idea that we must take the experiences of others seriously. David Estlund (1997) and Henry Richardson (1997) can be seen as offering the following justification for deliberative democracy, which has affinities with the justification offered here. Assume that impartiality and fairness are a part of our aim in morals and politics. We have a preference for deliberative over random ways of achieving these aims. We think that flipping a coin would 106 Truth, Politics, Morality be a bizarre method of making political decisions, even though it exemplifies a kind of impartiality. This preference reflects something – it reflects that there are standards which require our respect. A legitimate procedure must be answerable to reasons – it must be capable of paying attention to the reasons that matter. If, for instance, a vote – which exemplifies another kind of impartiality – failed to provide minimal resources to the most needy, we would reject it. For it would fail to meet standards of charity or generosity which demand respect. Since reasons come out in debate and deliberation, a legitimate procedure must be one that proceeds by debate and deliberation. Flipping a coin or simple voting cannot guarantee that standards and reasons will be respected and so we need to deliberate. That is the only methodology which is justified for those who hold that random methods of impartiality are not preferable over methods which pay attention to reasons. My argument, along similar but more all-embracing lines, is that any method for arriving at genuine beliefs (beliefs which aim at truth) must be a method which is driven by reasons and experience. The argument embraces more because having a belief that is aimed at truth, or at getting things right, is something that every believer is committed to, whereas impartiality is not. So the point I have been urging is stronger than Estlund’s and Richardson’s. The shared point is that if you want to have your beliefs governed by reasons, then you will have to expose yourself to different reasons, different perspectives, different arguments. You will have to engage in debate and deliberation. The stronger point is that a case can be made that any opponent is committed to having her beliefs governed by reasons, so any opponent is committed, whether he acknowledges it or not, to debate and deliberation. It will be asked here whether I am not trying to give a sort of transcendental argument for the principle that we must take the experience of others seriously – a kind of argument for which I criticised Habermas and Apel. Do I not also try to have democratic principles fall out of the very ideas of belief, assertion, and truth? Indeed, my argument is that the requirements of genuine belief show that we must, broadly speaking, be democratic inquirers. But the argument avoids the difficulties which accompany Habermas’ and Apel’s view. First, many problems for Habermas and Apel arise because their account of the necessary preconditions of communication seems to rest on an unintuitive definition of communication as an attempt at mutual understanding. Communication often, it seems, flies in the face of the democratic principles. I have argued that certain things are required for genuine belief and my argument, I hope, is based on a plausible and thin understanding of what is involved in the concept. A belief is something that one gives, or would give, or could give, reasons for, something that one takes to be responsive to the way things are. And that seems right. Second, I have offered an independent argument for the thought that truth is what would be agreed upon. I do not take for granted an identification of truth with the results of inquiry when I try to justify the democratic method. Moral deliberation 107 And one of my arguments for that method – that adopting a method which ignores the experience of others is a bad means for getting beliefs which best account for all experience and argument – has no transcendental ring at all to it. It does not suggest that the possibility of language or communication depends on a certain conception of how to live (i.e. freely and equally). Rather, it is a hypothetical imperative of the sort: if you want beliefs which will withstand the force of experience, then do such-and-such. The additional empirical or sociological claim is then added – virtually everybody claims to be after such beliefs. So my argument rests on a conception of deliberation or inquiry which tries to be relatively uncontentious. All it takes for someone to be a participant in these practices is a commitment to wanting beliefs which will not be overturned by subsequent experience and reason. Again, it is extremely easy for a state to qualify itself as a belief on this view. All it takes is that acknowledgement, explicit or implicit, that the belief answers to something. This is not Popper’s claim that a belief must be straightforwardly falsifiable. A belief merely must be sensitive to something. And in those cases in which I fail in my commitment to have my belief sensitive to reasons, all that can be said is that I fail to have a genuine belief aimed at truth, not, contra Habermas in some moods, that my humanity is compromised. I merely do not aim at the state I say I aim at, or I adopt a method which is not appropriate to my stated aim. One reason for the thin conception of inquiry here is to avoid the kind of difficulties that face Habermas and Apel. But another is to avoid an objection often put to liberalism. The charge is that the liberal tries to elevate a particular conception of the good – something like ‘rational’ debate – to the status of an obvious and universal good. Rawls, for instance, has been accused of having a conception of the self as a rational chooser who wants to maximise her own advantage. The charge is that it is far from obvious that such a conception of the rational self ought to be written in stone for all. I try to defend a view which has it that all conceptions of good be on the table for discussion. There appears to be no built-in bias here, no bias which will ensure that certain conceptions will be declared best. But is the pragmatist not sectarian in that she thinks that the life of active citizenship, or the life of deliberation, or some other variation on a liberal ideal is the life we must live?2 Some will see in pragmatism an unpleasant privileging of the inquirer, the debater, or the investigator. Perhaps pragmatism merely enshrines the culturally specific values of argumentation, impartiality, and experimentation. We shall see in the following sections that, for a number of reasons, this is not right. The pragmatist does not think that deliberation is always appropriate. And the nature of deliberation is left entirely open. For hand in hand with the idea that truth would be the product of human inquiry is the idea that what is true, what is rational, and what the standards of good deliberation are is a matter of what human inquiry would take to be true, rational, and good by way of standards of inquiry. There is no truth beyond our human inquiries, 108 Truth, Politics, Morality which always take place in a particular context. So even the kind of deliberation that is appropriate is something that will come out only through thought and deliberation. Indeed, the self will only be formed through thinking and decision-making. It is only in the midst of inquiry that we discover who and what we are, what we want, and what fits best with the evidence and argument. But we shall see that this kind of process can take all kind of forms, not all of them resembling self-conscious, organised, and systematic investigation. Again, the point is that it is much more plausible to think that all inquirers aim at getting beliefs which will not disappoint them than to think that all inquirers aim at being rational, in the fairly narrow sense meant by some Western academics. The pragmatist rejects the idea that the nature of reason (that it is neutral, that it abides by first-order logic, or whatever) is identifiable in advance of inquiry. Rather than require all to conform to such purportedly objective standards, the pragmatist makes the thinner and more plausible requirement that all inquirers aim at getting beliefs which will stand up to the test of experience. It is very easy to qualify oneself as an inquirer on this conception of inquiry. Neutrality: three senses Although the pragmatist puts forward a methodology for moral and political deliberation which is thin and low-profile, it would be a mistake to suggest that it is thereby neutral, in the sense most often meant by liberal political theorists. ‘Neutral’ is one of those words that is so overused that confusion about just what is meant often accompanies it. The sense of neutrality which I am concerned to distance myself from is what I shall call the neutrality principle and it is the pillar of many a liberal theory. The neutrality principle holds that government should not encourage or discourage conceptions of what it is to lead a good life. On this kind of neutrality, as long as the pursuit of a conception of the good does not directly harm others, the state should take a principled position of non-interference. The view is often summarised by saying that conceptions of the good are off the public agenda – the state cannot explicitly encourage them and citizens, in their public roles, cannot appeal to them in debate and argument. I shall argue, on the contrary, that often an appeal to reasons which refer to one’s conception of what is valuable can and should be made in public deliberation. If the relevant distinction is between the neutral and the public/ political willingness to judge ways of life, then we shall see that the pragmatist wants to allow for such judgement and declare this kind of neutrality unwise. There are other distinctions, which issue in other senses of neutrality, which we would do well to keep in mind. One is between the neutral and the committed and another is between the neutral and the biased. Moral deliberation 109 We have seen that central to the pragmatist’s argument is that it is impossible to be neutral in the first sense – to be uncommitted.3 There is no way of thinking of neutrality as a kind of perspectivelessness. One must have some perspective, some commitments. If being impartial involves the thought that an individual can rise above a particular context and somehow make a judgement which stands apart from her background beliefs, then impartiality is indeed not to be had.4 Our policies and beliefs arise from deliberation between individuals with particular, partial, views, views laden with the reasoner’s background beliefs, education, and cultural expectations. It is, however, possible and desirable in politics to be neutral in the second sense, to try to eradicate bias. A person is biased if he holds to his commitments in such a way as to close his mind to other beliefs. So being unbiased requires, amongst other things, that one try to put oneself in the other’s shoes, so to speak – that one try to imagine what it would be like to see the issue from the perspective of others. If we pull together the thoughts regarding these two distinctions, we can see that having commitments, being steeped in a fallible point of view, having a perspective, need not be a form of illusion, bias, or distortion. As with one’s location in perceiving an object, one must perceive from a particular perspective. But a range of perspectives will be consistent with each other and consistent with a particular description of the object or situation. If we are careful to try to shift perspectives, we can get a more complete take on matters.5 An individual occupies a perspective, and can occupy any one of a number of perspectives. Attention to these possibilities can produce a judgement that is not biased. There are of course difficulties in drawing the line between having a perspective and having a bias. For instance, in 1994 the Ontario Court of Appeal dealt with a charge of bias against a member of a Police Services Board of Inquiry into the conduct of officers who strip-searched a black woman in public. The board member in question was the president of a Chapter of the Congress of Black Women of Canada and the majority in the court agreed that the statements about the prevalence of racism, which the Congress had made in the past, created a reasonable apprehension of bias. The dissenting judge, however, noted that affiliation with an organisation which by its very nature might be said to favour one side in a dispute could not be enough to show bias. The other board members, after all, were recommended by the Ontario Police Association and the Ontario Association of Municipalities.6 The difficulty is that a board member on a tribunal always has some view, fallible and defeasible, about what constitutes discrimination and what should be done about it. Did this woman’s having the view she had constitute a bias that made her unsuitable to make judgements of improper searches by police officers? Should a candidate be disqualified from being a Constitutional Court judge who has to decide on same-sex gender legislation because he believes that homosexuals should have the same rights as heterosexuals? Should he 110 Truth, Politics, Morality be disqualified if he is a gay rights activist? What makes it more likely that someone who is a believer in ‘family-values’ can be fair in thinking about such legislation? They also have a view or a perspective. The fact that it is difficult to draw these lines does not mean that we can or should avoid thinking about them. We must make judgements about when someone is biased. One way I have suggested making them is to ask whether that person is taking the experience of all seriously. And there will be a host of other kinds of searching questions to be asked. There are of course limitations on the exercise of viewing matters from different perspectives. (Can I really get a sense of what it is to be a black unemployed male with no prospects at all?) But again, we must not draw a too-pessimistic conclusion from the difficulties. They do not entail that one should not do one’s best. Indeed, as Kymlicka argues, without the attempt to get into the shoes of another, elected representatives cannot even begin to do what they are supposed to do (1995: 140f). If understanding the needs and interests of those who differ from oneself is impossible, then those who are supposed to represent citizens cannot do so, for they are sure to differ in some respects from all whom they are supposed to represent. We assume that empathy with others can produce some understanding. Indeed, the assumption behind our attempts to understand others must be right, if we accept the point which is stressed by Onora O’Neil and Donald Davidson. If we can translate and interpret the utterances of others, if we can communicate at all, this reveals a great deal of shared belief. (Davidson argues that in order to have an idea or a concept at all, we have to communicate and thus share a picture of the world.) If we succeed in talking together and thinking together, if we succeed in disagreeing with others, rather than simply failing to comprehend others, then we share a great deal. Agreement and disagreement are parasitic on mutual understanding. And thus the idea that we have different conceptual schemes, that we live in different worlds, so to speak, is scuttled. Let us now turn to the neutrality principle, the principle on which a central dispute between the pragmatist and the mainstream liberal lies. The advocate of this kind of neutrality holds that politics is not the place for debate about what is good. He thinks it always undesirable or impossible to judge, in a public forum, the way of life or the practices of another. The pragmatist argues, on the other hand, that we sometimes can and ought to make these judgements. In what follows, I shall show how the pragmatist can shut out the neutrality principle without shutting out the things that it is designed to promote – autonomy, equality, and tolerance. The upshot will be that multiculturalism must be promoted by the institutions of a pragmatist democracy. The liberal who thinks the neutrality principle important will be attracted to a policy of benign neglect of minority groups. We shall see that the pragmatist, on the other hand, will think that a policy upon which minority groups are encouraged and perhaps even granted special group rights and powers might be warranted. Moral deliberation 111 We might, that is, find ourselves heeding Kymlicka’s advice to treat different kinds of group claims differently (1995: 58–60). For instance, what is in the interests of justice for African-Americans, with their history of slavery, segregation and exclusion from the majority culture, may not be in the interests of Native Americans with their history of forced inclusion into the majority culture. ‘Colour-blind’ laws may be what is required in the first case, but not in the second. The ‘may’ here is important. The negative side of colour-blind laws is that they can rule out affirmative action and encourage laws which are merely ‘facially neutral’ – for instance, heavy mandatory sentences for crack cocaine in the US, which tend to impact severely on blacks. So one has to go carefully before making such a recommendation. As I shall argue below, it is not the philosopher’s place to say that such-and-such a policy is what is required. It is the philosopher’s place to make theoretical room for the controversies to come to the surface and for the right public policy to be made. The principle of neutrality The liberal neutrality principle is prompted by a worry. History shows us that if the state takes it upon itself to evaluate conceptions of the good, then the likes of homosexual acts, possession of soft drugs, and divorce can get prohibited. For such things can be thought by those in power to be worse than worthless. So Ronald Dworkin expresses his reasons for the importance of the neutrality principle thus: Government must… leave people free to live as they think best so long as they do not harm others. But the Reverend Jerry Falwell, and other politicians who claim to speak for some ‘moral majority,’ want to enforce their own morality with the steel of the criminal law. They know what kind of sex is bad, which books are fit for public libraries, what place religion should have in education and family life, when human life begins, that contraception is sin, and that abortion is capital sin. (1983: 1) If we want to keep at bay the likes of the moral majority, we must prohibit appeals to any particular parochial morality (in this case, the fundamentalist Christian morality) in politics. That some moral majority will enforce their beliefs upon all is indeed a worry. But it is just a worry. It is not a necessary result of allowing conceptions of the good a voice on the public agenda. And the worry might be quieted by any one of a number of different policies, the neutrality principle being one of the many. We ought to be concerned about the possibility that certain ways of life will be wrongly denigrated, but neutrality may not be the only, or the best, way to prevent that from happening. 112 Truth, Politics, Morality One argument for the neutrality principle begins from a scepticism about morality. If it is impossible to make objective judgements about what is valuable, then a government cannot do it. And citizens, when they are arguing about policy and about justice, cannot do it either. We saw in Chapter 1 that Schmitt turns this argument on its head so that it is an argument not for, but against the idea of liberal neutrality. If it is not possible to aim at making rational and true judgements about the good, then all that one can do is plumb for one’s own conception. Some of these conceptions will undermine the liberal framework, and thus that framework only thinks itself neutral, when in fact it really cannot help but be an upholding of the liberal view of the good under the bogus name of neutrality. So a consideration against the argument from scepticism is that it crumbles internally and that it just as easily leads to intolerance within a society, not tolerance. Another consideration against the argument is the bundle of reasons given in Chapter 2 about how we are better advised to think of moral judgements as genuine beliefs and assertions which aim at truth. There is a perspective – a human, not a God’s eye perspective – from which values and conceptions of the good can be judged. Not every advocate of the neutrality principle, however, is a sceptic about moral judgement. Some argue that even if it is possible to adjudicate between conceptions of the good, governments ought to avoid it and leave such deliberation to individuals in private forums. These arguments start from the thought that something like autonomy, or equality, or respect for persons, is basic.7 Dworkin, for instance, argues that equality and respect require neutrality: a government which forces or encourages its citizens to live what it takes to be the good life puts constraints on citizens which ‘they could not accept without abandoning [their] sense of [their] equal worth’ (1983: 3). If a government is going to treat its citizens as equals, it must be neutral with respect to the nature of the good life. Or one could claim that if individuals are to retain their autonomy – their capacity to stand apart from their current interests and aims in order to revise, question, discover, and choose their ends – their ends cannot be chosen by an authority. They must be free to choose what kind of life plan they will adopt, free to change that plan, and free to make mistakes. Governments ought not to decide what the best lifestyle is and use their coercive power to then interfere with individuals who fail to adopt it or happen to fall outside of it. I shall suggest that the pragmatist can have autonomy, equality and respect for persons, without adopting the neutrality principle. This is a good thing, for I shall also set some arguments against the non-sceptical version of the neutrality principle. One argument is Andrew Kernohan’s recent claim that the liberal’s commitment to the moral equality of persons requires the liberal to think that governments must act, in a non-neutral way, to discourage a polluted cultural Moral deliberation 113 climate (Kernohan 1998). An oppressive culture, such as one in which women are treated as inferior, and encouraged to see themselves as inferior, can cause real accumulative harm. It can undermine self-respect, it can cause stereotypes to be internalised by those who are oppressed,8 and it can harm our interest in knowing the good. Thus a government which is committed to liberal principles of equality and respect for persons should not be neutral about such oppression – it ought to use its persuasive power to try to reform a polluted climate.

#### Thus, the standard is promoting pragmatic deliberation.

#### Prefer:

#### 1] Materiality- Our framework moves away from abstraction and understands knowledge as changing in order to base social change and revision of ideas. Glaude 7’ Eddie S. (Eddie S. Glaude Jr. is the chair of the Center for African-American Studies and the William S. Tod Professor of Religion and African-American Studies at Princeton University.) In a Shade of Blue : Pragmatism and the Politics of Black America. University of Chicago Press, 2007. EBSCOhost. (5-7) Recut from Dulles AS

In a Shade of Blue is my contribution to the tradition I have just sketched. My aim is to think through some of the more pressing conceptual problems confronting African American political life, and I do so as a Deweyan prag-matist. I should say a bit about what I mean by this self-description. John Dewey thought of philosophy as a form of cultural and social criticism. He held the view that philosophy, properly understood as a mode of wis-dom, ought to aid us in our efforts to overcome problematic situations and worrisome circumstances. The principal charge of the philosopher, then, is to deal with the problems of human beings, not simply with the problems of philosophers. For Dewey, over the course of his long career, this involved bridging the divide between science, broadly understood, and morals—a divide he traced to a conception of experience that has led philosophers over the centuries to tilt after windmills. Dewey declared, “The problem of restoring integration and co-operation between man’s beliefs about the world in which he lives and his beliefs about values and purposes that should direct his conduct is the deepest problem of any philosophy that is not isolated from life.”9Dewey bases this conclusion on several features of his philosophy: (1) anti foundationalism, (2) experimentalism, (3) contextualism, and (4) soli-darity.10 Antifoundationalism, of course, is the rejection of foundations of knowledge that are beyond question. Dewey, by contrast, understands knowledge to be the fruit of our undertakings as we seek “the enrichment of our immediate experience through the control over action it exercises.”**11He insists that we turn our attention from supposed givens to actual consequences**, pursuing a future fundamentally grounded in values shaped by experience and realized in our actions. This view makes clear the experimental function of knowledge. Dewey emphasized that knowledge entails efforts to control and select future experience and that we are always con-fronted with the possibility of error when we act. We experiment or tinker, with the understanding that all facts are fallible and, as such, occasionally afford us the opportunity for revision.12Contextualism refers to an understanding of beliefs, choices, and actions as historically conditioned. Dewey held the view that inquiry, or the pursuit of knowledge, is value-laden, in the sense that we come to problems with interests and habits that orient us one way or another, and that such pursuits are also situational, in the sense that “knowledge is pursued and produced somewhere, some when, and by someone.”13Finally, solidarity captures the associational and cooperative dimensions of Dewey’s thinking. Dewey conceives of his pragmatism as “an instrument of social improvement” aimed principally at expanding democratic life and broadening the ground of individual self-development.14Democracy, for him, constitutes more than a body of formal procedures; it is a form of life that requires constant attention if we are to secure the ideals that purportedly animate it. Individuality is understood as developing one’s unique capacities within the context of one’s social relations and one’s community. The formation of the democratic character so important to our form of associated living involves, then, a caring disposition toward the plight of our fellows and a watchful concern for the well-being of our democratic life.

#### 2] Actor spec – governments use pragmatism i.e. ancient Greece or in 2005 the US working with thousands of ordinary citizens to rebuild after hurricane katrina. o/w on real world and specificity since differnet agents have differnet obligations

#### 3] Rule following paradox – we can infinitely question why to follow that rule, which will eventually terminate at some base assumption with no external justification. Only the pragmatic deliberation solves since we realize what it means to follow rules is to participate in the common good because we look at multiple interpretation of the rules

#### 4] Value Pluralism- Other ethical theories rely on minimalistic criteria as their foundation, our framework resolves this by using these criteria to better inform our judgments LaFollete 2K

"Pragmatic Ethics" [Hugh LaFollette](http://www.hughlafollette.com/index.htm) In [Blackwell Guide to Ethical Theory](http://www.hughlafollette.com/papers/b-guide.htm) 2000. Hugh LaFollette is Marie E. and Leslie Cole Professor in Ethics at the University of South Florida St. Petersburg. He is editor-in-chief of The International Encyclopedia of Ethics. <https://www.hughlafollette.com/papers/b-guide.htm> recut from Dulles AS

Pragmatic ethics takes a more aggressive approach, insisting that mankind is responsible for determining the best ethical system possible, which will be refined as new discoveries are made. Put simply; truth does not exist in some abstract realm of thought independent of social relationship or actions; instead, the truth is a function of an active … Pragmatism, according to William James, is derived from the Greek word pragma, which means action and serves as the basis of our English words practical and practice. Pragmatism originated in the United States around 1870, and now presents a growing third alternative to both analytic and Continental philosophical traditions worldwide. 1 - Acceptance . Ethics is a branch of philosophy that is responsible for studying the principles that govern the conduct of an individual. Employs criteria, but is not criterial The previous discussions enable us to say more precisely why pragmatists reject a criterial view of morality. Pragmatism's core contention that practice is primary in philosophy rules out the hope of logically prior criteria. Any meaningful criteria evolve from our attempt to live morally – in deciding what is the best action in the circumstances. Criteria are not discovered by pure reason, and they are not fixed. As ends of action, they are always revisable. As we obtain new evidence about ourselves and our world, and as our worlds changes, we find that what was appropriate for the old environment may not be conducive to survival in the new one. A style of teaching that might have been ideal for one kind institution (a progressive liberal arts college) at one time (the 60s) may be wholly ineffective in another institution (a regional state university) at another time (the 80s). But that is exactly what we would expect of an evolutionary ethic. Neither could criteria be complete. The moral world is complex and changeable. No set of criteria could give us univocal answers about how we should behave in all circumstances. If we cannot develop an algorithm for winning at chess, where there are only eighteen first moves, there is no way to develop an algorithm for living, which has a finitely large number of "first moves." Moreover, while the chess environment (the rules) stays constant, our natural and moral environments do not. We must adapt or fail. While there is always one end of chess -- the game ends when one player wins – the ends of life change as we grow, and as our environments change. Finally, we cannot resolve practical moral questions simply by applying criteria. We do not make personal or profession decisions by applying fixed, complete criteria. Why should we assume we should make moral decisions that way? Appropriates insights from other ethical theories Nonetheless, there is a perfectly good sense in which a pragmatic ethic employs what we might call criteria, but their nature and role dramatically differ from that in a criterial morality (Dewey 1985/1932) . Pragmatic criteria are not external rules we apply, but are tools we use in making informed judgements. They embody learning from previous action, they express our tentative efforts to isolate morally relevant features of those actions. These emergent criteria can become integrated into our habits, thereby informing the ways that we react to, think about, and imagine our worlds and our relations to others. This explains why pragmatists think other theories can provide guidance on how to live morally. Standard moral theories err not because they offer silly moral advice, but because they misunderstand that advice. Other moral theories can help us isolate (and habitually focus on) morally relevant features of action. And pragmatists take help wherever they can get it. Utilitarianism does not provide an algorithm for deciding how to act, but it shapes habits to help us "naturally" attend to the ways that our actions impact others. Deontology does not provide a list of general rules to follow, but it sensitizes us to ways our actions might promote or undermine respect for others. Contractarianism does not resolve all moral issues, but it sensitizes us to the need for broad consensus. That is why it is mistaken to suppose that the pragmatist makes specific moral judgements oblivious to rules, principles, virtues, and the collective wisdom of human experience. The pragmatist absorbs these insights into her habits, and thereby shapes how she habitually responds, and how she habitually deliberates when deliberation is required. This also explains why criterial moralities tend to be minimalistic. They specify minimal sets of rules to follow in order to be moral. Pragmatism, on the other hand, like virtue theories, is more concerned to emphasize exemplary behavior – to use morally relevant features of action to determine the best way to behave, not the minimally tolerable way

#### Impact Calc:

#### Deliberation is procedural not substantive, which means that we are first concerned with the decision-making procedure of deliberation and then evaluation of what impacts matter most. To clarify, consequences are a sequencing question. Serra 09,

Juan Pablo Serra. What Is and What Should Pragmatic Ethics Be? Some Remarks on Recent Scholarship*.* EUROPEAN JOURNAL OF PRAGMATISM AND AMERICAN PHILOSOPHY. 2009. Francisco de Vitoria College, Humanities Department, Faculty member. Dulles AS

BY WAY OF CONCLUSION: As LaFollette presents it, the key to understanding pragmatist ethics is that it is not an ethical theory per se, but rather it is an anthropology, a way of understanding the human being and his moral action. Therefore, pragmatist ethics in reality does not propose a new ethical theory, but rather “reconstructs” through a new prism the basic intuitions of the best ethical theories. The fundamental element on which the attention of pragmatist ethics centers is deliberation. Deliberationisnotdirectlyresponsible for directing action,butonly doessoindirectly**,** bymeans of a critique of past actions, theefforttocorrect or reinforce certain habits and mental experiments that each actor performs in order to determine his own future conduct, and even to determine in a general manner the way in which one wishes to live one’s life (or, what amounts to the same thing, the type of person one wishes to be). Thetaskofapragmatistethics, therefore**,** isnottoprovidefinalsolutions**,** butrather to indicate that it is onlyvia thetestingandcommunicationofexperiencesthatthe superiorityof onemoral ideaover another can be demonstrated. In this sense, one of the principal missions of any given version of pragmatist ethics is to indicate some general manner in which habits can be acquired which, later, will facilitate personal deliberation – both internal and external – in the broad variety of circumstances which make up the moral life.

### Offense

#### 1] The appropriation of space by private entities isn’t value neutral but is sutured in a discourse of the cosmic elite and unequal IR.

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]

The US government’s support for private space companies is also likely to lead to the reinforcement of Earth-bound wealth inequalities in space. Many NewSpace actors frame their long-term ambitions in space with strong anthropogenic undertones, by offering the salvation of the human race from impending extinction through off-world colonial developments (Kearnes & Dooren: 2017: 182). Yet, this type of discourse disguises the highly exclusive nature of these missions. Whilst they seem to suggest that there is a stake for ordinary citizens in the vast space frontier, the reality is that these self-described space pioneers are a member of a narrow ‘cosmic elite’ – “founders of Amazon.com, Microsoft, Pay Pal… and a smattering of games designers and hotel magnates” (Parker, 2009: 91). Indeed, private space enterprises have themselves suggested that they have no obligation to share mineral resources extracted in space with the global community (Klinger, 2017: 208). This is reflected in the speeches of individuals such as Nathan Ingraham, a senior editor at the tech site EngadAsteroid mining, who claimed that asteroid mining was “how [America is] going to move into space and develop the next Vegas Strip” (Shaer, 2016: 50). Such comments highlight a form of what Beery (2016) defines as ‘scalar politics’. In similar ways to the ‘scaling’ of unequal international relations that has constituted our relationship with outer space under the guise of the ‘global commons’ (Beery, 2016: 99), private companies – through their anthropogenic discourse – are scaling existing Earth-bound wealth inequalities and social relations into space by siphoning off extra-terrestrial resources. By constructing their endeavours in ways that appeal to the common good, NewSpace actors are therefore concealing the reality of how commercial resource extraction serves the exclusive interests of their private shareholders at the expense of the vast majority of the global population.

#### 2] Appropriation intrinsically guts deliberative procedures since it denies the owner’s permission for property rights, blocking one possible experience/form of communication from other groups since it guts communal approaches

Oxford. Lexico. Appropriation. https://www.lexico.com/en/definition/appropriation

the action of taking something for one's own use, typically without the owner's permission.

### Advantage

#### Privatization of space will increase space debris collisions, Muelhaupt 19

[Theodore J. Muelhaupt, June 2019, "Space traffic management in the new space era", [Journal of Space Safety Engineering](https://www.sciencedirect.com/science/journal/24688967), https://www.sciencedirect.com/science/article/pii/S246889671930045X?via%3Dihub, date accessed 1-23-2022] //Lex AT

The last decade has seen rapid growth and change in the space industry, and an explosion of commercial and private activity. Terms like NewSpace or democratized space are often used to describe this global trend to develop faster and cheaper access to space, distinct from more traditional government-driven activities focused on security, political, or scientific activities. The easier access to space has opened participation to many more participants than was historically possible. This new activity could profoundly worsen the space debris environment, particularly in low Earth orbit (LEO), but there are also signs of progress and the outlook is encouraging. Many NewSpace operators are actively working to mitigate their impact. Nevertheless, NewSpace represents a significant break with past experience and business as usual will not work in this changed environment. New standards, space policy, and licensing approaches are powerful levers that can shape the future of operations and the debris environment. 2. Characterizing NewSpace: a step change in the space environment In just the last few years, commercial companies have proposed, funded, and in a few cases begun deployment of very large constellations of small to medium-sized satellites. These constellations will add much more complexity to space operations. Table 1 shows some of the constellations that have been announced for launch in the next decade. Two dozen companies, when taken together, have proposed placing well over 20,000 satellites in orbit in the next 10 years. For perspective, fewer than 8100 payloads have been placed in Earth orbit in the entire history of the space age, only 4800 [1] remain in orbit and approximately 1950 [2] of those are still active. And it isn't simply numbers – the mass in orbit will increase substantially, and long-term debris generation is strongly correlated with mass. This table is in constant flux. It is based largely on U.S. filings with the Federal Communications Commission (FCC) and various press releases, but many of the companies here have already altered or abandoned their original plans, and new systems are no doubt in work. Although many of these large constellations may never be launched as listed, the traffic created if just half are successful would be more than double the number of payloads launched in the last 60 years and more than 6 times the number of currently active satellites. Current space safety, space surveillance, collision avoidance (COLA) and debris mitigation processes have been designed for and have evolved with the current population profile, launch rates and density of LEO space. By almost any metric used to measure activity in space, whether it is payloads in orbit, the size of constellations, the rate of launches, the economic stakes, the potential for debris creation, the number of conjunctions, NewSpace represents a fundamental change. 3. Compounding effects of better SSA, more satellites, and new operational concepts The changes in the space environment can be seen on this figurative map of low Earth orbit. Fig. 1 shows the LEO environment as a function of altitude. The number of objects found in each 10 km “bin” is plotted on the horizontal axis, while the altitude is plotted vertically. Objects in elliptical orbits are distributed between bins as partial objects proportional to the time spent in each bin. Some notable resident systems are indicated in blue text on the right to provide an altitude reference. The (dotted) red line shows the number of objects in the current catalog tracked by the U.S. Space Surveillance Network (SSN). All the COLA alerts and actions that must be taken by the residents are due to their neighbors in the nearby bins, so the currently visible risk is proportional to the red line. Fig 1 Download : Download full-size image Fig. 1. Objects in LEO orbit by altitude per 10 km altitude bin. Elliptical orbit objects distributed by portion spent in each bin. Some notable existing resident systems are listed on the right. New residents, including some replacement systems, are on the left. (For interpretation of the references to color in this figure, the reader is referred to the web version of this article.) The red line of the current catalog does not represent the complete risk; it indicates the risk we can track and perhaps avoid. A rule of thumb is that the current SSN LEO catalog contains objects about 10 cm or larger. It is generally accepted that an impact in LEO with an object 1 cm or larger will cause damage likely to be fatal to a satellite's mission. Therefore, there is a large latent risk from unobserved debris. While we cannot currently track and catalog much smaller than 10 cm, experiments have been performed to detect and sample much smaller objects and statistically model the population at this size [3]. The (solid) blue line represents the model of the 1 cm and larger debris that is likely mission-ending, usually called lethal but not trackable. If LEO operators avoid collisions with all the objects in the red line, they are nonetheless inherently accepting the risk from the blue line. This risk is already present. The (dashed) orange line is an estimate of the population at 5 cm and larger and is thus an estimate of what the catalog might conservatively be a few years after the Space Fence, a new radar system being built by the Air Force, comes on line (currently planned for 2019) [4]. Commercial companies offering space surveillance services, such as LeoLabs, ExoAnalytics, Analytic Graphics Inc., Lockheed, and Boeing, might also add to the number of objects currently tracked. Space Policy Directive 3 (SPD-3) [13] specifically seeks to expand the use of commercial SSA services. Existing operators can expect a sharp increase in the number of warnings and alerts they will receive because of the increase in the cataloged population. Almost all the increase will come from newly detected debris [5]. The pace of safety operations for each satellite on orbit will significantly change because of the increase in the catalog from the Space Fence. This effect is compounded because the NewSpace constellations described in Table 1 will drastically change the profile of satellites in LEO. The green bars in Fig. 1 represent the number of objects that will be added to the catalog (red or orange lines) from only the NewSpace large LEO constellations at their operational altitudes. This does not include the rocket stages that launch them, or satellites in the process of being phased into or removed from the operational orbits. Neighbors of one of these new constellations may face a radically different operations environment than their current practices were designed to address. Satellites in these large LEO constellations typically have planned operational lifetimes of 5–10 years. Some companies have proposed to dispose of their satellites using low thrust electric propulsion systems, which would spiral satellites down over a period of months or years from operating altitudes as high as 1500 km through lower orbits where the Hubble Space Telescope, the International Space Station, and other critical LEO satellites operate [6]. Similar propulsive techniques would raise replacement satellites from lower launch injection orbits to higher operational orbits. These disposal and replenishment activities will add thousands of satellites each year transiting through lower altitudes and posing a risk to all resident satellites in those lower orbits. More importantly, failures will occur both among transiting satellites and operational constellations, potentially leaving hundreds more stranded along the transit path. Aerospace studies [7–9] have shown that failed satellites, whether they fail during operations or fail during disposal, can pose as great or even greater risk than the many thousands of operational satellites (Fig. 2). Given the rapid flux in the proposed large LEO constellations (LLC), we created a Future Constellations Model (FCM) with elements that represented the characteristics of the different systems being proposed. In our models, almost all the collisions and the resulting debris from those collisions occur because of failed systems. Most large constellation operators intend to perform active collision avoidance for active systems, whether operational or in some stage of check-out or disposal, but failed satellites are assumed to be incapable of maneuver. Fig. 2 also shows that satellites in the disposal phase can contribute to collisions similarly to satellites in the operational phase. Fig 2 Download : Download full-size image Fig. 2. Collisions during operations and disposal over 10 years for various NewSpace Future Constellation Models (FCMs). 4. A notional illustration of workload The highest risk to operational satellites comes from the lethal but non-trackable debris that is depicted in the blue line in Fig. 2. However, operators perform collision avoidance only on the objects that can be tracked and cataloged. Advances in tracking and NewSpace launches will both act to increase this workload. A key element of the problem is that an increase in the LEO population will lead to an increase in close approaches to existing satellites [5], and the potential for accidental collisions. Conjunction prediction, collision probability (Pc), and maneuver planning for most existing satellite operators is a time- and personnel-intensive operation. Orbit analysts, and propulsion, navigation, and communications systems personnel are involved in evaluating and planning maneuvers over several days and must do so even if the ultimate decision is to “fly through” a close approach. Since most existing systems have small numbers of vehicles and the number of conjunctions any given operator experiences is relatively small, COLA remains a manual process. For systems not designed with automated maneuver planning, a COLA assessment that progresses all the way to a maneuver plan can consume considerable effort, whether or not the maneuver is executed. If a large constellation is deployed next to an existing resident system, the existing system may experience many conjunctions and alerts due to its close proximity of the dense new constellation. A sufficiently large constellation will, in effect, form a “shell” where frequent opportunities for conjunctions will be created. For example, Fig. 3 depicts a fictional scenario where 1225 “New” satellites are distributed in 35 planes in circular orbits at 1000 km altitude, at 98° inclination. These are placed near a hypothetical “Old” six-satellite constellation operating in a nearly circular orbit at the same altitude and 63° inclination. Following a common operations practice, we assume that the Old satellite operators flag a conjunction at Pc> 10−7, start COLA assessment with additional tracking at Pc> 10−6, and plan a COLA maneuver when the Pc> 10−5. A conjunction with Pc > 10−4 would typically be considered a significant risk leading most operators to maneuver. Fig 3 Download : Download full-size image Fig. 3. “New” large LEO constellation at same average altitude as “Old” existing constellation. Currently, the Old system in this example would typically see a warning (Pc > 10−6) a few times a month at this altitude, and of those, a few per year might cross the maneuver threshold. For the operations center, this would be multiplied by the number of satellites in the constellation. When the New system parks nearby, the number of COLA alerts jumps substantially. But the number of alerts depends entirely on the error bubble, (covariance) used. If the typical errors of the public external tracking data and the orbit propagation methods that are widely available (General Perturbations, or GP) are used for both constellations, over a 30-day period we see 129 conjunctions that cross the threshold for COLA assessment (Pc> 10−6), and 53 that cross the maneuver planning threshold (Pc> 10−5) (Fig. 4). This is nearly 2 per day. This could be an enormous workload for a manual process. If a high accuracy catalog (Special Perturbations, or “SP”) and a high-fidelity propagator with its typical covariances is used, the number of conjunctions goes from 129 to a more manageable 10. SP data is maintained by the Air Force, but it is not widely available. It is interesting to note that nine of those 10 crossed the maneuver-planning threshold, and of those, four crossed the Pc> 10−4 where many operators would choose to execute a maneuver. Compared to GP, the SP-quality data resulted in far fewer warnings and flagged four very close conjunctions. The operations center would have been able to concentrate on fewer “false alarms”. We also computed the case where GPS-quality owner-operator data was used for both systems, in which we assumed near-real-time owner-operator position data of very high quality was provided by both operators and used in the collision analysis. In this case, NONE of the conjunctions resulted in a warning and no COLA alerts were generated. The closest approach was 99 m, with a Pc of 3.7 × 10−7 using SP. But because of the quality of the GPS-based position data, this conjunction did not raise an alert because the fully-informed operators could be confident that a collision would not occur. Fig 4 Download : Download full-size image Fig. 4. Number of COLA alerts in 30 days for various qualities of position knowledge when a fictional new system is deployed near an existing one. In the example, an operations center for the Old constellation of six satellites could go from about one COLA assessment a week to nearly one per day per satellite, if only the published satellite catalog is available. If a new constellation operates too close to an existing system, the operator workload may become unreasonable using existing processes. But high accuracy data makes this manageable, and GPS-quality owner-operator data for both systems makes the problem vanish. Since these constellations are likely to be operated by different companies or governments, sharing high-quality position data would likely require an active space traffic management organization. Existing operators will not necessarily have large constellations parked nearby, but they will nonetheless be affected by the new activity. The new large constellations’ satellites typically will have relatively short lifetimes and will need frequent replenishment. The traffic transiting up and down will be substantial, and failures could leave stranded objects at intermediate altitudes, permanently increasing the collision risk. 5. Conjunction warning overload NewSpace operators will face a different challenge due to the vast increase in numbers of satellites. While there are likely as many operational plans as there are operators, a large constellation must consider close approaches with itself. Even if there are no neighboring systems, self-conjunctions can occur between two members of the same constellation. Depending on the configuration, a given operator could see hundreds to thousands of self-conjunctions that cross typical warning thresholds each day using current practices. This could be an issue for a space traffic management (STM) agency, even if it is not an issue for the operator. Aerospace models show that for one possible NewSpace constellation, more than 500,000 self-conjunctions each year could result that cross the typical Pc > 10−6 warning threshold. If no action were taken, we would expect 2–3 collisions per year. This is clearly unacceptable. Thus, current tracking accuracy and processes might produce millions of warnings per year for NewSpace operators to prevent half a dozen actual collisions. Under current practices operators would need to sort through an enormous haystack to find the needles, and because a handful of actual collisions will occur, the warnings cannot be ignored. Note that predictions such as the ones above are based on the current process of using non-cooperative external tracking and observation (i.e., skin tracking), and the resulting covariances. The number of warnings could be drastically reduced by using more accurate owner-operator information, but that is not currently universally done. The Space Data Association provides such a service, but only uses owner-operator data from members. In any case, current practices will need to change to avoid an unreasonable number of warnings. Recognizing this, many NewSpace operators are planning extensive automation to operate their constellations and mitigate the workload of manual COLA assessments, particularly for self-conjunctions. Most are also taking steps to obtain much higher quality position data than external observation permits. While automation may mitigate the COLA assessment workload for new operators, current operators may have to continue their labor-intensive assessments. The interaction between a NewSpace constellation and a nearby existing or a second large NewSpace constellation will create new challenges for operators. 6. The problem with maneuvers Recent years have seen a steady growth in the use of low-thrust propulsion via ion thrusters. These highly efficient systems have the feature of long, even continuous thrusting. A feature of the automation planned by some of the NewSpace operators is to make extensive use of low-thrust systems for both transit and station-keeping. One approach is to launch into low LEO orbit, transition to the higher LEO operational altitude via low-thrust, and at end-of-life, deorbit the same way. During automated operations, the individual vehicles may autonomously maneuver as needed. Orbit insertion at low LEO altitudes for functional check-out testing has the advantage of allowing early satellite failures to more safely occur in very low, “self-cleaning” orbits. But the slow spirals up to the operational altitude and down for disposal create numerous opportunities for conjunctions with all the resident satellites between the injection altitude and the operational altitude. Existing catalog and COLA processes have no effective way of dealing with frequent or continuous maneuvers, since they are based on predictions generated days in advance, with no assumption of maneuvers. If an existing constellation is operating in proximity to one of these automated constellations, its current COLA process breaks down. The automated maneuvers may move one vehicle in the constellation out of a conjunction, or it could create a new problematic conjunction. The existing practices have an inherent lag and data latency, and a small maneuver will at the very least add to the covariance error. The timelines of the current catalog process and automated maneuvers for a large constellation are fundamentally incompatible.

#### Climate change leaves dead satellites stuck in space magnifying debris from megaconstellations, O’Callaghan 21

[Jonathan O’Callaghan, 5-19-2021, "What if space junk and climate change become the same problem?", WION, https://www.wionews.com/science/what-if-space-junk-and-climate-change-become-the-same-problem-386124, date accessed 1-23-2022] //Lex AT

Our atmosphere is a useful ally in clearing up space junk. Collisions with its molecules cause drag, pulling objects back into the atmosphere. Below 300 miles above the Earth's surface, most objects will naturally decay into the thicker lower atmosphere and burn up in less than 10 years. In the lower atmosphere, carbon dioxide molecules can rerelease infrared radiation after absorbing it from the sun, which is then trapped by the thick atmosphere as heat. But above 60 miles where the atmosphere is thinner, the opposite is true. “There’s nothing to recapture that energy,” said Matthew Brown, also from the University of Southampton and the paper’s lead author. “So it gets lost into space.” The escape of heat causes the volume of the atmosphere, and thus its density, to decrease. Since 2000, Brown and his team say the atmosphere at 250 miles has lost 21% of its density because of rising carbon dioxide levels. By 2100, if carbon dioxide levels double their current levels — in line with the worst-case scenario assessment by the Intergovernmental Panel on Climate Change — that number could rise to 80%. For space junk, the implications are stark. More than 2,500 objects larger than 4 inches in size currently orbit at or below an altitude of 250 miles. In the worst-case scenario, increased orbital lifetimes of up to 40 years would mean fewer items are dragged into the lower atmosphere. Objects at this altitude would proliferate by 50 times to about 125,000. Even in a best-case scenario, where carbon dioxide levels stabilize or even reverse, the amount of space junk would still be expected to double. Brown thinks a more probable outcome is somewhere in between, perhaps a 10 times or 20 times increase. The research is “very important work,” said John Emmert, an atmospheric scientist at the US Naval Research Laboratory in Washington, D.C., who has studied atmospheric density loss. However, Emmert says more research is needed to understand the severity of the problem — with the impact of the sun’s solar cycle also known to be a major factor in atmospheric density changes. The findings may also pose challenges for regulators and satellite operators, especially SpaceX, Amazon and other companies seeking to build megaconstellations of thousands of satellites to beam internet service down to the ground from low Earth orbit.

#### Private debris cleanup will fail due to government uncertainty, Erwin 21

[Sandra Erwin, 10-21-2021, "Analysis: Space Force endorsement not enough to incentivize debris removal industry", SpaceNews, https://spacenews.com/analysis-space-force-endorsement-not-enough-to-incentivize-debris-removal-industry/, date accessed 1-23-2022] //Lex AT

WASHINGTON — U.S. Space Force generals [made headlines](https://spacenews.com/u-s-space-force-would-support-commercial-services-to-remove-orbital-debris/) recently calling for the development of commercial services to clean up orbital debris. These statements convey a sense of urgency about the risk of collisions in space but the government’s indecision about how to manage this problem is delaying private investments and efforts to develop space cleanup businesses, says an industry analyst. In a [white paper](https://www.avascent.com/news-insights/avascent-apogee/building-the-business-case-for-space-debris-removal/) published Oct. 21 by the consulting firm Avascent, analyst Nick Bolger points to comments made last month by [Maj. Gen. DeAnna Burt](https://spacenews.com/space-force-backs-development-of-commercial-orbital-debris-removal-systems/), the vice commander of the Space Force’s Space Operations Command, who said “there is a use case for industry to go after” space debris removal as a business opportunity. From an industry perspective, however, the business case is not quite so clear, Bolger said. “Significant developments need to settle across industry in order to prove out this claim,” he said of Burt’s comments. With 16,000 satellites expected to be launched from 2021 to 2025, there is wide consensus that space sustainability and safe spaceflight operations are at risk. But actions to address the problem are being “challenged by shifting priorities of domestic and international governing agencies,” Bolger argues. “Varying opinions of regulatory stakeholders on how to approach debris removal prevents the U.S. government from taking action per se,” he said. A major obstacle is uncertainty about what agencies should take the lead in specific areas. A case in point is the transition of space traffic management responsibilities from the Defense Department to the Commerce Department which has for years been bogged down in studies and analysis. The Space Force says it wants to buy debris removal services, but if space traffic management moves to another agency it’s not clear who would make those buying decisions. “As far as a business case goes, I believe that investors may be wary of backing some of these nascent companies without a guarantee of future procurements by the government,” Bolger said. Another concern is the lack of standard metrics about collision hazards, he said. Agencies “self-regulate their space operations, often leveraging varying data sources and risk criteria to determine their need for collision avoidance maneuvers.” There’s been a number of close calls and near-miss collisions in recent years, and yet “governing bodies have shown little indication of taking the lead on deploying space debris removal and remediating technologies in the near future,” Bolger noted.

#### Kessler Syndrome destroys all satellites and traps us on earth, Ratner 18

[Paul Ratner, 8-29-2018, "How the Kessler Syndrome can end all space exploration and destroy modern life", Big Think, https://bigthink.com/surprising-science/how-the-kessler-syndrome-can-end-all-space-exploration-and-destroy-modern-life/, date accessed 1-23-2022] //Lex AT

What makes that situation possible is the fact that there are millions of micrometeoroids as well as man-made debris that is already orbiting Earth. The danger posed by even a small fragment that’s traveling at high speeds is easy to see. As [calculated by NASA](https://www.businessinsider.com/space-junk-kessler-syndrome-chain-reaction-prevention-2018-3), a 1-centimeter “paint fleck” traveling at 10km/s (22,000 mph) can cause the same damage as a 550-pound object traveling 60 miles per hour on Earth. If the size of the shard was increased to 10 centimeters, such a projectile would have the force of 7 kilograms of TNT. Now imagine thousands of such objects flying around at breakneck speeds and crashing into each other. If a chain reaction of exploding space junk did occur, filling the orbital area with such dangerous debris, the space program would indeed be in jeopardy. Travel that goes beyond the LEO, like the planned mission to Mars, would be made more challenging but still conceivably possible. What would, of course, be affected if the Kessler Syndrome’s worst predictions came to pass, are all the services that rely on satellites. Core aspects of our modern life—GPS, television, military and scientific research—all of that would be under threat. NASA experienced a small-scale Kessler Syndrome incident in the 1970s when Delta rockets that were left in orbit started to explode into shrapnel clouds. This inspired Kessler, an astrophysicist, to show that there is a point when the amount of debris in an orbit gets to critical mass. At that point, the collision cascading would start even if no more things are launched into space. And once the chain of explosions begins, it can keep going until the orbital space can no longer be used. In Kessler’s estimate, it would take 30 to 40 years to get to such a threshold. [NASA says](https://www.nasa.gov/centers/wstf/site_tour/remote_hypervelocity_test_laboratory/micrometeoroid_and_orbital_debris.html) that its experts caution that we are already at critical mass in the low-Earth orbit, which is about 560-620 miles (900 to 1,000 kilometers) out. According to NASA estimates, the Earth’s orbit currently has [500,000 pieces of space debris](http://orbitaldebris.jsc.nasa.gov/faqs.html#3) up to 10cm long, over 21,000 pieces of debris longer than 10cm, and more than 100 million pieces of space debris smaller than 1cm. A 2009 incident dubbed the [Cosmos-Iridium collision](http://www.spacesafetymagazine.com/space-debris/kessler-syndrome/iridium-33-cosmos-2251-years-later-learned-then/)featured a space collision between Russian and American communication satellites that provided a preview of potential attractions in the massive debris field it created. The accident resulted in more than 2,000 pieces of relatively large space junk.

#### Debris triggers nuclear miscalculation—uniquely likely in space, Blatt 20

[[Talia M. Blatt](https://hir.harvard.edu/author/talia/), May 26th, 2020, "Anti-Satellite Weapons and the Emerging Space Arms Race", Harvard International Review, https://hir.harvard.edu/anti-satellite-weapons-and-the-emerging-space-arms-race/, date accessed 1-23-2022] //Lex AT

Despite their deterrent functions, ASATs are more likely to provoke or exacerbate conflicts than dampen them, especially given the risk they [pose](https://thebulletin.org/2019/06/arms-control-in-outer-space-the-russian-angle-and-a-possible-way-forward/) to early warning satellites. These satellites are a crucial element of US ballistic missile defense, capable of [detecting missiles](https://www.globalsecurity.org/space/world/japan/warning.htm) immediately after launch and tracking their paths. Suppose a US early warning satellite goes dark, or is shut down. Going dark could signal a glitch, but in a world in which other countries have ASATs, it could also signal the beginning of an attack. Without early warning satellites, the United States is much more susceptible to nuclear missiles. Given the strategy of counterforcing—[targeting](https://www.belfercenter.org/sites/default/files/files/publication/isec_a_00273_LieberPress.pdf) nuclear silos rather than populous cities to prevent a nuclear counterattack—the Americans might believe their nuclear weapons are imminently at risk. It could be [twelve hours](https://books.google.com/books?id=ET8lDwAAQBAJ&pg=PA1&lpg=PA1&dq=%22Protecting+Space+Assets%22+johnson-freese&source=bl&ots=6Oq0IdeBjw&sig=ACfU3U1G6Hj8QdP4JlCRNxA6i5XplZwHyg&hl=en&sa=X&ved=2ahUKEwj1n-jT2YzpAhUugnIEHUuMCu4Q6AEwA3oECAkQAQ#v=onepage&q=%22Protecting%20Space%20Assets%22%20johnson-freese&f=false) before the United States regains satellite function, which is too long to wait to put together a nuclear counterattack. The United States, therefore, might move to mobilize a nuclear attack against Russia or China over what might just be a piece of debris shutting off a satellite. Additionally, accidental warfare, or strategic miscalculation, is uniquely likely in space. It is [much easier](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) to hold an adversary’s space systems in jeopardy with destructive ASATs than it is to [sustainably defend](https://www.cnas.org/publications/commentary/the-us-military-should-not-be-doubling-down-on-space) a system, which is expensive and in some cases not technologically feasible because of limitations on satellite movement. Space is therefore [considered](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) offense-dominant; offensive tactics like weapons development are prioritized over defensive measures, such as [improving GPS](https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067) or making satellites more resistant to jamming. As a result, countries are left with poorly defended space systems and rely on offensive posturing, which increases the risk that their actions are perceived as aggressive and incentivizes rapid, risky counterattacks because militaries cannot rely on their spaced-based systems after first strikes.

#### Nuke war leads to extinction and is the most probable impact scenario – scientific consensus agrees

Tegmark 17 Max Tegmark, 5-26-2017, "Why 3,000 Scientists Think Nuclear Arsenals Make Us Less Safe," Scientific American Blog Network, https://blogs.scientificamerican.com/observations/why-3-000-scientists-think-nuclear-arsenals-make-us-less-safe/, SJBE Max Erik Tegmark is a Swedish-American physicist and cosmologist. He is a professor at the Massachusetts Institute of Technology and the scientific director of the Foundational Questions Institute.

Delegates from most United Nations member states are gathering in New York next month to negotiate a nuclear weapons ban, and 30 Nobel Laureates, a former U.S. Secretary of Defense and over 3,000 other scientists from 84 countries have signed an [open letter](https://futureoflife.org/nuclear-open-letter/) in support. Why? We scientists like to geek out about probabilities, megatons and impact calculations, so we see the nuclear situation differently than many politicians and pundits. From the public debate, one might think that the cold war threat is over and that the most likely way to be killed by a nuke is by being attacked by Iran, North Korea or terrorists, but that’s not what nerdy number crunching reveals. Those media-dominating scenarios could potentially kill millions of people—except that Iran has no nukes and North Korea lacks missiles capable of reliably delivering their dozen or so Hiroshima-scale bombs. But scientific research has shown that a nuclear war between the superpowers might kill hundreds or potentially even thousands of times more people, and since it’s not a hundred times less likely to occur, the laws of statistics tell us that it’s the nuke scenario most likely to kill you. Why is superpower nuclear war so risky? First of all, massive firepower: there are more than [14,000 nuclear weapons](https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/) today, some of which are hundreds of times more powerful than North Korea’s and those dropped on Japan. Over 90 percent of these belong to Russia and the US, who keep thousands on hair-trigger alert, ready launch on minutes notice. A [1979 report by the US Government](https://www.princeton.edu/~ota/disk3/1979/7906/7906.PDF) estimated that all-out war would kill 28-88 percent of Americans and 22-50 percent of Soviets (150-450 million people with today’s populations). But this was before the risk of nuclear winter was discovered in the 1980’s.Researchers realized that regardless of whose cities burned, massive amounts of smoke could spread around the globe, blocking sunlight and transforming summers into winters, much like when asteroids or supervolcanoes caused mass extinctions in the past. A peer-reviewed analysis published by Robock et al (2007) showed cooling by about 20°C (36°F) in much of the core farming regions of the US, Europe, Russia and China (by 35°C in parts of Russia) for the first two summers, and about half that even a full decade later. Years of near-freezing summer temperatures would eliminate most of our food production. It is hard to predict exactly what would happen if thousands of Earth’s largest cities were reduced to rubble and global infrastructure collapsed, but whatever small fraction of all humans didn’t succumb to starvation, hypothermia or epidemics would probably need to cope with roving, armed gangs desperate for food. There are large uncertainties in Nuclear Winter predictions. For example, how much smoke is produced and how high up it rises would determine its severity and longevity. Given this uncertainty, there is no guarantee that most people would survive. It has therefore been argued that the traditional nuclear doctrine of Mutual Assured Destruction (MAD) be replaced by Self-Assured Destruction (SAD): even if one of the two superpowers were able to launch its full nuclear arsenal against the other without any retaliation whatsoever, nuclear winter might still assure the attacking country’s self-destruction. Recent research has suggested that even a limited nuclear exchange between India and Pakistan could cause enough cooling and agricultural disruption to endanger up to [2 billion people](https://hinwcampaignkit.org/section-4/section-4/), mostly outside the warring countries. The fact that nuclear powers are taking the liberty to endanger everyone else without asking their permission has led to growing consternation in the world’s non-nuclear nations. This has been exacerbated by a seemingly endless [series of near-misses](https://futureoflife.org/background/nuclear-close-calls-a-timeline/) in which nuclear war has come close to starting by accident, and leaders of many non-nuclear nations feel less than thrilled by the idea of being destroyed by something as banal as a malfunctioning early warning-system in a nation that they are not threatening. Such concerns prompted 185 non-nuclear nations to sign the 1970 Non-Proliferation-Treaty (NPT), promising to remain nuke-free in return for the nuclear nations phasing out theirs in accordance with NPT Article VI, whereby each party "undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control”. Nearly 50 years later, many of these "have-nots” have concluded that they were tricked, and that the "haves” have no intention of ever keeping their end of the bargain. Rather than disarming, the U.S. and Russia have recently announced massive investments in novel nuclear weapons. Russia has recently touted a cobalt-encased doomsday bomb reminiscent of the dark comedy "Dr. Strangelove,” and the U.S. plans to spend a trillion dollars replacing most of its nuclear weapons with new ones that are more effective for a first strike. Adding insult to injury, India, Pakistan and Israel have been allowed to join the nuclear club without major repercussions. "The probability of a nuclear calamity is higher today, I believe, that it was during the cold war," said former U.S. Secretary of Defense William J. Perry, who signed the open letter. This disillusionment from the “have-nots” prompted 123 of them to launch an initiative in the United Nations General Assembly, where the nuclear nations lack veto power. In late 2016, they voted to launch the aforementioned UN negotiations that may produce a nuclear weapons ban treaty this summer. But a ban obviously wouldn’t persuade the nuclear ``haves” to eliminate their nukes the next morning, so what’s the point of it? The way I see it, most governments are frustrated that a small group of countries with a minority of the world's population insist on retaining the right to ruin life on Earth for everyone else with nuclear weapons. Such “might makes right” policy has precedent. In South Africa, for example, the minority in control of the unethical Apartheid system didn't give it up spontaneously, but because they were pressured into doing so by the majority. Similarly, the minority in control of unethical nuclear weapons won't give them up spontaneously on their own initiative, but only if they're pressured into doing so by the majority of the world's nations and citizens. The key point of the ban is to provide such pressure by stigmatizing nuclear weapons. Nuclear ban supporters draw inspiration from the 1997 Ottawa treaty banning landmines. Although the superpowers still refuse to sign it, it created enough stigma that many people now associate mines not with national security, but with images of children who have had limbs blown off while playing in peace-time. This stigma caused leading arms manufactures to half production in response to investor pressure and dwindling demand. In 2014, the Pentagon announced that it was halting landmine use outside of the Korean peninsula. Today, the global landmine market has nearly collapsed, with merely a single manufacturer (South Korean Hanwa) remaining. The "have-not” negotiators hope that a nuclear ban treaty will similarly stigmatize nuclear weapons, persuading us all that we’re less safe with more nukes—even if they are our own. If this happens, it will increase the likelihood that the ``haves” trim their nuclear arsenals down to the minimum size needed for effective deterrence, reverting from SAD back to MAD and making us all safer. Here is the text of the letter. A list of some of the notable signatories follows. AN OPEN LETTER FROM SCIENTISTS IN SUPPORT OF THE UN NUCLEAR WEAPONS NEGOTIATIONS Nuclear arms are the only weapons of mass destruction not yet prohibited by an international convention, even though they are the most destructive and indiscriminate weapons ever created. We scientists bear a special responsibility for nuclear weapons, since it was scientists who invented them and discovered that their effects are even more horrific than first thought. Individual explosions can obliterate cities, radioactive fallout can contaminate regions, and a high-altitude electromagnetic pulse may cause mayhem by frying electrical grids and electronics across a continent. The most horrible hazard is a nuclear-induced winter, in which the fires and smoke from as few as a thousand detonations might darken the atmosphere enough to trigger a global mini ice age with year-round winter-like conditions. This could cause a complete collapse of the global food system and apocalyptic unrest, **potentially killing most people on Earth** – even if the nuclear war involved only a small fraction of the roughly 14,000 nuclear weapons that today’s nine nuclear powers control. As Ronald Reagan said: “A nuclear war cannot be won and must never be fought.” Unfortunately, such a war is more likely than one may hope, because it can start by mistake, miscalculation or terrorist provocation. There is a steady stream of accidents and false alarms that could trigger all-out war, and relying on never-ending luck is not a sustainable strategy. Many nuclear powers have larger nuclear arsenals than needed for deterrence, yet prioritize making them more lethal over reducing them and the risk that they get used. But there is also cause for optimism. On March 27 2017, an unprecedented process begins at the United Nations: most of the world’s nations convene to negotiate a ban on nuclear arms, to stigmatize them like biological and chemical weapons, with the ultimate goal of a world free of these weapons of mass destruction. We support this, and urge our national governments to do the same, because nuclear weapons threaten not merely those who have them, but all people on Earth.

#### Public satellite data is key to biodiversity, Pennisi 21

[Elizabeth Pennisi, 18 NOV 2021, "Satellites offer new ways to study ecosystems—and maybe even save them", No Publication, https://www.science.org/content/article/satellites-offer-new-ways-study-ecosystems-maybe-even-save-them, date accessed 1-23-2022] //Lex AT

But such studies could only provide a snapshot of one forest at a time. To get the big picture of forests around the world, Cavender-Bares has sought a higher vantage. Now a plant ecologist at the University of Minnesota, Twin Cities, Cavender-Bares has devised ways to translate light measured by spectrometers flown over forests into insights about their health and resilience. She and others have [found this light](https://doi.org/10.1007/978-3-030-33157-3_1), captured from an airplane or satellite, holds clues to intimate details such as photosynthesis levels, the genetic diversity of the trees, and even the microbial inhabitants of the soil they grow in. Such remote sensing methods are not only revolutionizing how scientists such as Cavender-Bares study ecosystems, they’re also poised to become powerful new tools in the fight to protect them. Over the past year scientists have gathered to revise the most important international treaty aimed at conservation, the Convention on Biological Diversity (CBD). With the loss of plant and animal species accelerating, some researchers say conservation efforts should turn to remote sensing to monitor biodiversity in near–real time across wide swaths of the globe—and help policymakers prioritize the most critical areas. Historically, researchers had to venture out to jungles, deserts, and mountaintops to document the flora and fauna. But species distributions and abundances are changing faster than ground-based surveys can track, because of climate change, human activities, and other factors. Remote sensing offers the possibility of faster, more standardized monitoring across the entire globe. “In the past decade, there’s been a revolution in the technology available to characterize ecosystems from space,” says David Schimel, a research scientist at NASA’s Jet Propulsion Laboratory. Researchers are just beginning to figure out what remote sensing can and can’t do and how to incorporate it into global conservation efforts. But Schimel and others see great promise for supplementing ground-based measurements with a fuller picture of ecosystems’ health gleaned from aloft. “We want to transform the way biological research is done,” he says. CAVENDER-BARES FIRST learned that reflected or emitted light could help signal forest health during a graduate school visit to the Laboratory for the Use of ­Electromagnetic Radiation (LURE) at Paris-Sud University. In lab studies there almost 40 years ago, plant physiologist Jean-Marie Briantais and colleagues had shown they could measure photosynthetic activity by comparing how leaves fluoresce, or emit certain wavelengths of light, before and after being exposed to flashes of extremely bright white light. As the light displaces electrons inside chlorophyll, the intensity of red and infrared (IR) light emitted from the leaves varies, depending on how healthy the plant is. Later, Ismael Moya, a biophysicist at LURE, developed a sensor that required no extra light source, relying on sunlight instead. Moya went on to demonstrate that fluorescence could be detected from an airplane flying over crops, opening the way to surveying fields’ productivity remotely. “I just became fascinated with what we could learn from the interaction of plants with light and have been for 28 years,” Cavender-Bares says. In that time, researchers have mostly used methods based on reflected light, but fluorescence remains a valuable tool. By now, airplanes, drones, and towers all provide spectroscopic data on vegetation. So does NASA and the U.S. Geological Survey’s series of Landsat satellites, the first of which were launched in the 1970s. Initially, the agencies expected the satellites’ cameras to primarily capture images in visible light, but an experimental spectral sensor on board proved the value of recording more of the electromagnetic spectrum, such as near-IR light, and by 2013 the satellites were monitoring 11 portions of the spectrum. With these “multispectral” data, researchers can monitor how “green” or productive a vegetated landscape is. Spectroscopically detected dips in chlorophyll can also signal a forest that is suffering because of drought or insect invasion—or has been cleared for development.

#### Biodiversity loss causes extinction, Gallagher 21

[[Katherine Gallagher](https://inhabitat.com/author/katherinegallagher/), Apr 5, 2021, "“Extinction – The Facts” explores the global extinction crisis", Inhabitat - Green Design, Innovation, Architecture, Green Building | Green design &amp; innovation for a better world, https://inhabitat.com/extinction-the-facts-explores-the-global-extinction-crisis-and-its-consequences/, date accessed 1-19-2022] //Lex AT

Biodiversity loss [Biodiversity](https://inhabitat.com/tag/biodiversity/) refers to the variety of life found on Earth, including plants, animals and micro-organisms. Each of these species and organisms form unique communities and habitats, working together in various ecosystems to maintain balance. The United Nations brought 500 international scientists together in 2019 to investigate the current state of our natural world, only to find that the planet was losing biodiversity at a rate never seen before in the history of humanity. The results were unexpected and unprecedented; there were at least 1 million plant, animal and insect species threatened with extinction at a rate 100 times faster than their natural evolutionary rate. The numbers are nearly split, between about 500,000 insects and 500,000 plants and animals, with populations growing smaller by the day. “Extinction is a natural process,” explained professor Kathy Willis, a plant scientist at the University of Oxford. “Things come, they grow, their populations get huge and then they decline. But it’s the rate of extinction; that’s the problem.” When scientists look at previous groups in fossil records, extinction happens over millions of years. Today, we’re looking at tens of years. Since 1970, vertebrate animals — such as birds and reptiles — have declined by a total of 60%, while large animals have disappeared from three-quarters of their historic ranges. Professor Elizabeth Hadly, a biologist at Stanford University, said one of the most concerning aspects of this decline is that it’s happening simultaneously around the world. “In the Amazon, in Africa, in the [Arctic](https://inhabitat.com/tag/arctic); it’s happening not at one place and not with one group of organisms, but with all biodiversity, everywhere on the planet.” James Mwenda, a conservationist at Ol Pejeta Conservancy in Kenya, is the caretaker for the world’s last two living northern white rhinos, a [species](https://inhabitat.com/tag/species) that once numbered in the thousands throughout Central Africa. “Many people think of extinction being this imaginary tale told by conservationists, but I have lived it. I know what it is,” he said in the documentary. As a caretaker, Mwenda watched the northern white rhino population go from seven in 1990 to just two today, a mother and daughter named Najin and Fatu. A subspecies of the white rhinoceros, the northern white rhino was pushed to the critically endangered list due to hunting and habitat loss. “They’re here because we betrayed them,” he said sorrowfully. “And I think they feel it, this threatening tide of extinction that is pushing on them.” Losing entire portions of the planet’s individual species is tragic enough in itself, but the crisis encompasses much more than that. All of biodiversity is interlocked on a global scale, and the planet needs all parts of it to function properly. Humans are not outside of those ecological systems by any means. For example, a loss in insect species can put [pollination](https://inhabitat.com/tag/pollination/) at risk, which in turn puts food production at risk, affecting both humans and animals alike. Human influence The documentary also examines the ways that humans are driving biodiversity loss. Things like overfishing, deforestation and the illegal wildlife trade are the biggest contributors, but there are also less obvious threats like consumer-driven demand for products like clothes, which can cause pollution in their production. The [illegal wildlife trade](https://inhabitat.com/tag/illegal-wildlife-trade/) has become a multibillion dollar global industry over the last 20 years. Increased income in certain countries like China and Vietnam, where endangered animal parts may be seen as a status symbol or used for medicinal purposes, is one of the largest drivers. Pangolins, for instance, represent the most trafficked animals in the world, and the demand for their scales is directly responsible for their declining numbers. The scale of global [overfishing](https://inhabitat.com/tag/overfishing/) has dramatically increased as well. In some parts of the world, limits on ocean catch aren’t regulated. Scientists have seen declines in larger predator fish as their food supply dwindles due to overfishing, so the impact on marine ecosystems is widespread.

### Solvency

#### Plan: The appropriation of outer space by private entities is unjust.

#### Enforcement through banning constellations in the LEO by claiming they violate Article II of the OST, Johnson 20

[Christopher D. Johnson, 2020, "The Legal Status of MegaLEO Constellations and Concerns About Appropriation of Large Swaths of Earth Orbit", Secure World Foundation, https://swfound.org/media/206951/johnson2020\_referenceworkentry\_thelegalstatusofmegaleoconstel.pdf, date accessed 1-23-2022] //Lex AT

Are Constellations Appropriation? The astronomy community has already voiced concerns about the impact that constellations will have on astronomy (AstronomyNow 2019). Constellations also bring potential risks from space debris and radiofrequency interference, both of which will have an effect on space sustainability. Starlink’s 1584 satellites in the 550 km region would effectively triple the number of satellites in the 400–600 km region, for example. Leaving these important concerns aside, constellations should also be considered in the context of their general legal status – and specifically whether large swaths of Low Earth Orbit are being impermissibly claimed and possessed by individual actors (whether the commercial actor itself, or by the authorizing national government). For example, and as mentioned above, the OneWeb constellation will be in 12 orbital planes at 1200 km. Phase 1 of the SpaceX Starlink constellations will fly 66 satellites in 24 orbital planes, for a total of 1584 satellites in its initial constellation. Do these megaconstellations constitute an impermissible appropriation (or ownership) of particular regions of outer space? Without offering a definitive conclusion, the following sections first argue why, and then why not, these large constellations in LEO constitute impermissible appropriations of sections of outer space. The reader can consider for themselves which of the following opposing arguments they find more convincing. Yes, This Is Impermissible Appropriation Article II of the Outer Space Treaty, discussed above, is clear on the point that the appropriation of outer space, including the appropriation of either void space or of celestial bodies, is an impermissible and prohibited action under international law. No means or methods of possession of outer space will legitimize the appropriation or ownership of outer space, or subsections thereof. Excludes Others The constellations above, because they seem to so overwhelmingly possess particular orbits through the use of multiple satellites to occupy orbital planes, and in a manner that precludes other actors from using those exact planes, constitute an appropriation of those orbits. While the access to outer space is nonrivalrous – in the sense that anyone with the technological capacity to launch space objects can therefore explore space – it is also true that orbits closer to Earth are unique, and when any actor utilizes that orbit to such an extent to these proposed constellations will, it means that other actors simply cannot go there. The Legal Status of MegaLEO Constellations and Concerns About Appropriation... 15 To allow SpaceX, for example, to so overwhelmingly occupy a number of altitudes with so many of their spacecraft, essentially means that SpaceX will henceforth be the sole owner and user of that orbit (at least until their satellites are removed). No other actors can realistically expect to operate there until that time. No other operator would dare run the risk of possible collision with so many other spacecraft in that orbit. Consequently, the sole occupant will be SpaceX, and if “possession is 9/10th of the law,” then SpaceX appears to be the owner of that orbit. Done Without Coordination Additionally, SpaceX and other operators of megaconstellations are doing so without any real international conversation or agreement, which is especially egregious and transgressive of the norms of outer space. Compared to the regime for GSO, as administered by the ITU and national frequency administrators, Low Earth Orbit is essentially ungoverned, and SpaceX and others are attempting to seize this lack of authority to claim entire portions of LEO for itself; and before any international agreement, consensus, or even discussion is had. They are operating on a purely “first come, first served” basis that smacks of unilateralism, if not colonialism. Governments Are Ultimately Implicated As we know, under international space law, what a nongovernmental entity does, a State is responsible for. Article VI of the Outer Space Treaty requires that at least one State authorize and supervise its nongovernmental entities and assure their continuing compliance with international law. As such, the prohibition on nonappropriation imposed upon States under Article II of the Outer Space Treaty applies equally to nongovernmental private entities such as SpaceX. Nevertheless, through the launching and bringing into use of the Starlink constellation, SpaceX will be the sole occupant, and thereby, possessor, both fact and in law, of 550 km, 1100 km, 1130 km, 1275 km, and 1325 km above our planet (or whatever orbits they finally come to occupy). The same is true for the other operators of these large constellations which will be solely occupying entire orbits.

#### Exemptions destroy the coercive power of legal regimes – causes circumvention across the board.

Hickman and Dolman 2 – John and Everett, 2002, Associate professor in the Department of Government and International Studies at Berry College in Mt. Berry, [“Resurrecting the Space Age: A State–Centered Commentary on the Outer Space Regime,” Volume 21 Number 1, <https://doi.org/10.1080/014959302317350855>] Elmer Recut Justin

Thus a state party need merely announce its intention to withdraw and then wait one year. Withdrawal of a single state party to the treaty, however, would not necessarily terminate the treaty between the other state parties. Yet, the decision of an important state not to be bound by a regime–creating treaty obviously endangers the entire treaty. The decision of the United States or China to withdraw from the OST would have far greater implications for the survival of the international space regime than the same decision by Bangladesh, Burkina Faso, or Papua New Guinea—the equality of states under international law remains nothing more than a useful  ction. For the OST to remain good international law, it must be accepted as such by the major space faring states of the 21st Century: the United States, Russia, the European Union, Japan, and China. One defection from the regime by a member of this group would no doubt lead to its effective collapse, as the remaining space faring states are unlikely to use the kind of coercion necessary to enforce the regime. A more likely response to such a defection is a scramble to make similar claims to sovereignty, based on historical precedent and effective occupation. Similar rushes to stake claims for territory sovereignty in other celestial bodies might follow.

#### Private entities are non-governmental.

Dunk 11 – Frans G. von der Dunk, 2011, [“The Origins of Authorisation: Article VI of the Outer Space Treaty and International Space Law,” University of Nebraska] Justin

4. Interpreting Article VI of the Outer Space Treaty One main novel feature of Article VI stood out with reference to the role of private enterprise in this context. Contrary to the version of the concept applicable under general international law, where “direct state responsibility” only pertained to acts somehow directly attributable to a state and states could only be addressed for acts by private actors under “indirect,” “due care”/“due diligence” responsibility,18 Article VI made no difference as to whether the activities at issue were the state’s own (“whether such activities are carried on by governmental agencies” . . .) or those of private actors (. . . “or by non-governmental entities”). The interests of the Soviet Union in ensuring that, whomever would actually conduct a certain space activity, some state or other could be held responsible for its compliance with applicable rules of space law to that extent had prevailed. However, the general acceptance of Article VI as cornerstone of the Outer Space Treaty unfortunately was far from the end of the story. Partly, this was the consequence of key principles being left undefined.

#### Outer space is, Betz 21

[Eric Betz, 3-5-2021, "The Kármán Line: Where does space begin?", Astronomy, https://astronomy.com/news/2021/03/the-krmn-line-where-does-space-begin, date accessed 1-22-2022] //Lex AT

These days, spacecraft are venturing into the final frontier at a record pace. And a deluge of [paying space tourists](https://astronomy.com/news/2020/08/six-ways-to-buy-a-ticket-to-space-in-2021) should soon follow. But to earn their astronaut wings, high-flying civilians will have to make it past the so-called Kármán line. This boundary sits some 62 miles (100 kilometers) above Earth's surface, and it's generally accepted as the place where Earth ends and outer space begins. From a cosmic perspective, 100 km is a stone's throw; it's only one-sixth the driving distance between San Francisco and Los Angelas. It’s also well within the clutches of Earth's overpowering gravitational pull and expansive atmosphere. So, how did humans come to accept this relatively nearby location as the defining line between Earth and space? The answer is partly based on physical reality and partly based on an arbitrary human construct. That's why the exact altitude where space begins is something scientists have been debating since before we even sent the first spacecraft into orbit. What is the Kármán Line? [Experts have suggested](https://books.google.com/books/about/The_Never_Ending_Dispute.html?id=fG4_AQAAIAAJ) the actual boundary between Earth and space lies anywhere from a mere 18.5 miles (30km) above the surface to more than a million miles (1.6 million km) away. However, for well over half a century, most — including regulatory bodies — have accepted something close to our current definition of the Kármán Line. The Kármán line is based on physical reality in the sense that it roughly marks the altitude where traditional aircraft can no longer effectively fly. Anything traveling above the Kármán line needs a propulsion system that doesn’t rely on lift generated by Earth’s atmosphere — the air is simply too thin that high up. In other words, the Kármán line is where the physical laws governing a craft's ability to fly shift. However, the Kármán line is also where the human laws governing aircraft and spacecraft diverge. There are no national borders that extend to outer space; it’s governed more like international waters. So, settling on a boundary for space is about much more than the semantics of who gets to be called an astronaut. The United Nations has historically accepted the Kármán line as the boundary of space. And while the U.S. government has been reticent to agree to a specific height, people who fly above an altitude of 60 miles (100 km) typically earn astronaut wings from the Federal Aviation Administration. Even the Ansari X-prize chose the Kármán line as the benchmark height required to win its $10 million prize, which was claimed when Burt Rutan’s SpaceShipOne became the first privately-built spacecraft to carry a crew back in 2004.

### Underview

#### 1] Aff gets 1AR theory to prevent infinite abuse it’s DTD since the 1AR needs it to make the time investment worth, no RVIs because you can dump on a 30 sec shell for 6 minutes, and competing interps since the 2n can’t dump on a reasonability bright-line that excludes only what they did wrong – 1AR theory comes first the 1AR is too short to be able to rectify abuse and adequately cover substance.

#### 2] Procedural fairness first a) probability – one round cant alter subjectivity, but it can rectify fairness skews, b) link turns their role of the ballot since it proves we couldn’t engage in it and it is exclusionary, c) answers are self-defeating since they presuppose the judge evals them fairly.