## Framework

#### “Private property bad” – Arjun Rishi

#### Because I agree with the wise words of Arjun Rishi, I proudly affirm the resolution that, “Resolved: The appropriation of outer space by private entities is unjust.”

#### My standard is maximizing expected wellbeing.

#### Prefer it for the following reasons:

**1] Only pleasure and pain form our baseline desires and values. Any other values will always collapse into the ideals of pleasure and pain, or at least can be explained by them.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

I think several things should be said in response to Moore’s challenge to hedonists. First, **I do not think the burden of proof lies on hedonists to explain why the additional values are not intrinsic values. If someone claims that X is intrinsically valuable, this is a substantive, positive claim, and it lies on him or her to explain why we should believe that X is in fact intrinsically valuable.** Possibly, this could be done through thought experiments analogous to those employed in the previous section. Second, **there is something peculiar about the list of additional intrinsic values** that counts in hedonism’s favor**: the listed values have a strong tendency to be well explained as things that help promote pleasure and avert pain.** To go through Frankena’s list, life and consciousness are necessary presuppositions for pleasure; activity, health, and strength bring about pleasure; and happiness, beatitude, and contentment are regarded by Frankena himself as “pleasures and satisfactions.” The same is arguably true of beauty, harmony, and “proportion in objects contemplated,” and also of affection, friendship, harmony, and proportion in life, experiences of achievement, adventure and novelty, self-expression, good reputation, honor and esteem. Other things on Frankena’s list, such as understanding, **wisdom, freedom, peace, and security, although they are perhaps not themselves pleasurable, are important means to achieve a happy life,** and as such, they are things that hedonists would value highly. Morally good dispositions and virtues, cooperation, and just distribution of goods and evils, moreover, are things that, on a collective level, contribute a happy society, and thus the traits that would be promoted and cultivated if this were something sought after. To a very large extent, the intrinsic values suggested by pluralists tend to be hedonic instrumental values. Indeed, pluralists’ suggested intrinsic values all point toward pleasure, for while the other values are reasonably explainable as a means toward pleasure, pleasure itself is not reasonably explainable as a means toward the other values. Some have noticed this. Moore himself, for example, writes that though his pluralistic theory of intrinsic value is opposed to hedonism, its application would, in practice, look very much like hedonism’s: “Hedonists,” he writes “do, in general, recommend a course of conduct which is very similar to that which I should recommend.”24 Ross writes that “[i]t is quite certain that by promoting virtue and knowledge we shall inevitably produce much more pleasant consciousness. These are, by general agreement, among the surest sources of happiness for their possessors.”25 Roger Crisp observes that “those goods cited by non-hedonists are goods we often, indeed usually, enjoy.”26 What Moore and Ross do not seem to notice is that their observations give rise to two reasons to reject pluralism and endorse hedonism. The first reason is that if **the suggested non-hedonic intrinsic values are potentially explainable by appeal to just pleasure and pain** (which, following my argument in the previous chapter, we should accept as intrinsically valuable and disvaluable), **then—by appeal to Occam’s razor—we have at least a pro tanto reason to resist the introduction of any further intrinsic values and disvalues.** It is ontologically more costly to posit a plurality of intrinsic values and disvalues, so in case all values admit of explanation by reference to a single intrinsic value and a single intrinsic disvalue, we have reason to reject more complicated accounts. The fact that suggested non-hedonic intrinsic values tend to be hedonistic instrumental values does not, however, count in favor of hedonism solely in virtue of being most elegantly explained by hedonism; it also does so in virtue of creating an explanatory challenge for pluralists. The challenge can be phrased as the following question: If the non-hedonic values suggested by pluralists are truly intrinsic values in their own right, then why do they tend to point toward pleasure and away from pain?27

#### 2] Extinction outweighs and comes first.

Pummer 15 [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. “Moral Agreement on Saving the World” Practical Ethics, University of Oxford. May 18, 2015]

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter. Even John Rawls wrote, “All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.” Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They’d thus imply very strong reasons to reduce existential risk, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)

#### 3] Governments are forced to use util and as they can only understand generalities.

**Goodin 95** (Robert, philsopher at the Research School of the Social Sciences, Utilitarianism as Public Philosophy. P. 62-63)  
My larger argument turns on the proposition that there is something special about **the situation of public officials that makes utilitarianism more probable** for them than private individuals. Before proceeding with the large argument, I must therefore say what it is that makes it so special about public officials and their situations that make it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first, the argument from necessity. **Public officials are obliged to make their choices under uncertainty**, and uncertainty of a very special sort at that. All choices – public and private alike – are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. **Public officials,** in contras**t,** **are** relatively **poorly informed as to the effects that their choices will have on individuals**, one by one. What **they typically** do **know** are **generalities: averages and aggregates. They know what will happen most often to most people** as a result of their various possible choices**, but that is all.** That is enough to allow public policy-makers to use the utilitarian calculus – assuming they want to use it at all – to choose general rules or conduct.

## Contention 1

#### Our first contention is space debris.

#### Currently, entrepreneurs are pushing for privatization of space travel with increasing success

Thompson 20 [(Clive, author of Coders: The Making of a New Tribe and the Remaking of the World, a columnist for Wired magazine, and a contributing writer to The New York Times Magazine) “Monetizing the Final Frontier The strange new push for space privatization,” December 3, 2020 <https://newrepublic.com/article/160303/monetizing-final-frontier>]

For longtime enthusiasts of NASA’s human spacefaring, it was a singularly auspicious moment. Ever since NASA’s space shuttles were mothballed in 2011, the agency had no American-owned way of getting people into space. It had been paying the Russian government to fly U.S. astronauts up and back, on Russia’s Soyuz spacecraft. But this flight was different. It was the first time humans had flown in a rocket and a capsule made by a private-sector company: SpaceX, the creation of the billionaire Elon Musk. The launch was also a SpaceX branding bonanza. The astronauts rode up to the rocket in a Tesla, Musk’s fabled luxury electric car; when they’d reached orbit, they broadcast a live video in which they thanked SpaceX for making the flight happen, and showed off the sleek capsule—a genuine marvel of engineering, with huge touch screen control panels that looked rather like the ones inside a Tesla itself. Over the next few years, **NASA will pay Musk and SpaceX $2.6 billion to ferry astronauts to and from the space station** six times. For the feds, this price tag is remarkably cheaper than the space shuttle, which cost over $1 billion per flight. In his speech after the launch, Trump lauded the cost savings that SpaceX had realized on the government’s behalf. SpaceX, he announced, “embodies the American ethos of big thinking and risk-taking.... Congratulations, Elon.” For Musk, though, the launch was more than just a technical success, and is bigger even than the $2.6 billion contract. It cements him as a leading player in what might seem the unlikeliest stage of the final frontier’s exploration—the privatization of space. **Private-sector activity in space travel is accelerating dramatically**—rocketing, one might say. For decades, ever since people first headed for orbit in the 1960s, spaceflight had been mostly the preserve of governments. States were the only actors with the money and technical acumen to blast things into the vacuum and get them safely down again. The private sector didn’t have NASA’s know-how, nor—more important—a business plan that could rationalize the massive outlay of capital required to operate in space. In the last few years, that calculus has changed dramatically. **A generation of “New Space” entrepreneurs has begun launching rockets** and satellites**. Some seek to flood the planet with fast, cheap mobile-phone signals; others want to manufacture new products in zero gravity**, harnessing the novel physics of such **conditions to engineer substances that can’t be made in Earth**’s gravity. Further afield, they’re aiming to harvest water on the moon and even mine asteroids. Backing this burst of entrepreneurial fervor are many billionaires who made their money in the early Wild West of the internet, including Amazon’s Jeff Bezos, with dreams of building space colonies, and Musk, the former PayPal titan who hopes to personally make it to Mars.Barack Obama’s administration made the first major overtures to the space privatizers, signing legislation that paved the way for today’s space boom. But the real land rush has occurred under Trump, via a flurry of executive orders designed to give private firms greater access to “low-Earth orbit.” Trump **officials have even touted the idea of privatizing the $100 billion space station itself**—the last signature NASA-sponsored human spacecraft project still aloft. When Trump’s transition team in 2017 pondered the handoff of low-Earth orbit to the private sector, it concluded: “**This may be the biggest and most public privatization effort America has ever conducted**.” Or as Texas GOP Senator Ted Cruz—at the time the chairman of the Space, Science, and Competitiveness Subcommittee—put it in 2018: “I predict the first trillionaire will be made in space.” The burst of activity and high-tech acumen thrills many space fans. But it is making many others quite nervous. Opening up space to a frenzy of private actors could, they agree, produce measurable benefits back on planet Earth—making crucial scientific research, environmental monitoring, and everyday communication cheaper. But the critics are quick to note as well that the history of privatization is spotty at best, with plenty of civically brutal knock-on effects: concentrations of monopolistic power, enfeebled democratic control, and widespread environmental degradation. We’ve seen all those problems appear on Earth as all manner of traditional social goods, from education and housing to pension plans and mass transit, have been targeted for private-sector control. Next up, it seems, is the great beyond.

#### Incoming mega-constellations of private satellites uniquely ensure unmanageable space debris, triggering the Kessler Syndrome.

Boley & Byers 21 [Aaron C., Department of Physics and Astronomy @ The University of British Columbia\*, and Michael, Department of Political Science @ The University of British Columbia; Published: 20 May 2021; Scientific Reports; “Satellite mega-constellations create risks in Low Earth Orbit, the atmosphere and on Earth,” <https://www.nature.com/articles/s41598-021-89909-7>]

**Companies** **are** placing satellites into orbit at an unprecedented frequency **to build** ‘mega-constellations’ **of communications satellites** in Low Earth Orbit (LEO). In two years, **the number of** active and defunct **satellites in** LEO **has increased by** **over 50%**, to about 5000 (as of 30 March 2021). SpaceX alone **is on track to add 11,000** more as it builds its Starlink mega-constellation **and has** already **filed for permission for another 30,000** satellites with the Federal Communications Commission (FCC)1. Others have similar plans, including OneWeb, Amazon, Telesat, and GW, which is a Chinese state-owned company2. The current governance system for **LEO**, while slowly changing, **is ill-equipped to handle** large satellite systems. Here, we outline how applying the consumer electronic model to satellites could lead to multiple tragedies of the commons. Some of these are well known, such as impediments to astronomy and an **increased risk of** space debris, while others have received insufficient attention, including changes to the chemistry of Earth’s upper atmosphere and increased dangers on Earth’s surface from re-entered debris. The heavy use of certain orbital regions might also result in a de facto exclusion of other actors from them, violating the 1967 Outer Space Treaty. All of these challenges could be addressed in a coordinated manner through multilateral law-making, whether in the United Nations, the Inter-Agency Debris Committee (IADC), or an ad hoc process, rather than in an uncoordinated manner through different national laws. Regardless of the law-making forum, mega-constellations require a shift in perspectives and policies: from looking at single satellites, to evaluating systems of thousands of satellites, and doing so within an understanding of the limitations of Earth’s environment, including its orbits. **Thousands of** satellites and 1500 rocket bodies **provide** considerable mass in LEO, **which can break into debris upon** collisions, explosions, or degradation in the harsh space environment. Fragmentations **increase** the cross-section of orbiting material, and with it, the collision probability **per time. Eventually, collisions could dominate on-orbit evolution, a situation called the** Kessler Syndrome3. There are already over 12,000 trackable debris pieces in LEO, with these being typically 10 cm in diameter or larger. Including sizes down to 1 cm, there are about a million inferred debris pieces, all of which threaten satellites, spacecraft and astronauts due to their orbits crisscrossing at high relative speeds. **Simulations of** the long-term evolution **of debris suggest** that LEO is already in the protracted initial stages of the Kessler Syndrome, **but that this could be managed** through active debris removal4. The **addition of** satellite mega-constellations and the general proliferation of low-cost satellites **in LEO** stresses the environment further5,6,7,8. Results The overall setting The rapid development of the space environment through mega-constellations, predominately by the ongoing construction of Starlink, is shown by the cumulative payload distribution function (Fig. 1). From an environmental perspective, the slope change in the distribution function defines NewSpace, an era of dominance by commercial actors. Before 2015, changes in the total on-orbit objects came principally from fragmentations, with effects of the 2007 Chinese anti-satellite test and the 2009 Kosmos-2251/Iridium-33 collisions being evident on the graph. Figure 1 [Figure 1 omitted] Cumulative on-orbit distribution functions (all orbits). Deorbited objects are not included. The 2007 and 2009 spikes are a Chinese anti-satellite test and the Iridium 33-Kosmos 2251 collision, respectively. The recent, rapid rise of the orange curve represents NewSpace (see "Methods"). Full size image Although the volume of space is large, individual satellites and satellite systems have specific functions, with associated altitudes and inclinations (Fig. 2). This increases congestion and requires active management for station keeping and collision avoidance9, with automatic collision-avoidance technology still under development. Improved space situational awareness is required, with data from operators as well as ground- and space-based sensors being widely and freely shared10. Improved communications between satellite operators are also necessary: in 2019, the European Space Agency moved an Earth observation satellite to avoid colliding with a Starlink satellite, after failing to reach SpaceX by e-mail. Internationally adopted ‘right of way’ rules are needed10 to prevent games of ‘chicken’, as companies seek to preserve thruster fuel and avoid service interruptions. SpaceX and NASA recently announced11 a cooperative agreement to help reduce the risk of collisions, but this is only one operator and one agency. Figure 2 [Figure 2 omitted] Orbital distribution and density information for objects in Low Earth Orbit (LEO). (Left) Distribution of payloads (active and defunct satellites), binned to the nearest 1 km in altitude and 1° in orbital inclination. The centre of each circle represents the position on the diagram, and the size of the circle is proportional to the number of satellites within the given parameter space. (Right) Number density of different space resident objects (SROs) based on 1 km radial bins, averaged over the entire sky. Because SRO objects are on elliptical orbits, the contribution of a given object to an orbital shell is weighted by the time that object spends in the shell. Despite significant parameter space, satellites are clustered in their orbits due to mission requirements. The emerging Starlink cluster at 550 km and 55° inclination is already evident in both plots (Left and Right). Full size image When completed, Starlink will include about as many satellites as there are trackable debris pieces today, while its total mass will equal all the mass currently in LEO—over 3000 tonnes. The satellites will be placed in narrow orbital shells, **creating** unprecedented congestion, with 1258 already in orbit (as of 30 March 2021). OneWeb has already placed an initial 146 satellites, and Amazon, Telesat, GW and other companies, operating under different national regulatory regimes, **are soon** likely **to follow**. Enhanced collision risk **Mega-constellations are** composed of mass-produced satellites **with** few backup systems. **This** consumer electronic model **allows for** short upgrade cycles and rapid expansions of capabilities, but also considerable discarded equipment. SpaceX will actively de-orbit its satellites at the end of their 5–6-year operational lives. However, this process takes 6 months, so roughly 10% will be de-orbiting at any time. If other companies do likewise, thousands of de-orbiting satellites will be slowly passing through the same congested space, **posing collision risks**. Failures will increase these numbers, although the long-term failure rate is difficult to project. Figure 3 is similar to the righthand portion of Fig. 2 but includes the Starlink and OneWeb mega-constellations as filed (and amended) with the FCC (see “Methods”). The large density spikes show that some shells will have satellite number densities in excess of n=10−6 km−3. Figure 3 [Figure 3 omitted] Satellite density distribution in LEO with the Starlink and OneWeb mega-constellations as filed (and amended) with the FCC. Provided that the orbits are nearly circular, the number densities in those shells will exceed 10–6 km−3. Because the collisional cross-section in those shells is also high, they represent regions that have a high collision risk whenever debris is too small to be tracked or collision avoidance manoeuvres are impossible for other reasons. Full size image Deorbiting satellites will be tracked and operational satellites can manoeuvre to avoid close conjunctions. However, this depends on ongoing communication and cooperation between operators, which at present is ad hoc and voluntary. A recent letter12 to the FCC from SpaceX suggests that some companies might be less-than-fully transparent about events13 in LEO. Despite the congestion and traffic management challenges, FCC filings by SpaceX suggest that collision avoidance manoeuvres can in fact maintain collision-free operations in orbital shells and that the probability of a collision between a non-responsive satellite and tracked debris is negligible. However, the filings do not account for untracked debris6, including untracked debris decaying through the shells used by Starlink. Using simple estimates (see “Methods”), the probability that a single piece of untracked debris will hit any satellite in the Starlink 550 km shell is about 0.003 after one year. Thus, if at any time there are 230 pieces of untracked debris decaying through the 550 km orbital shell, there is a 50% chance that there will be one or more collisions between satellites in the shell and the debris. As discussed further in “Methods”, such a situation is plausible. Depending on the balance between the de-orbit and the collision rates, if subsequent fragmentation events lead to similar amounts of debris within that orbital shell, a runaway cascade of collisions could occur. Fragmentation events are not confined to their local orbits, either. The India 2019 ASAT test was conducted at an altitude below 300 km in an effort to minimize long-lived debris. Nevertheless, debris was placed on orbits with apogees in excess of 1000 km. As of 30 March 2021, three tracked debris pieces remain in orbit14. Such long-lived debris has high eccentricities, and thus can cross multiple orbital shells twice per orbit. A major fragmentation event from a single satellite could affect all operators in LEO. Even if debris collisions were avoidable, meteoroids are always a threat. The cumulative meteoroid flux15 for masses m > 10–2 g is about 1.2 × 10–4 meteoroids m−2 year−1 (see “Methods”). Such masses could cause non-negligible damage to satellites16. Assuming a Starlink constellation of 12,000 satellites (i.e. the initial phase), there is about a 50% chance of 15 or more meteoroid impacts per year at m > 10–2 g. Satellites will have shielding, but events that might be rare to a single satellite could become common across the constellation. One partial response to these congestion and collision concerns is for operators to construct mega-constellations out of a smaller number of satellites. But this does not, individually or collectively, eliminate the need for an all-of-LEO approach to evaluating the effects of the construction and maintenance of any one constellation.

#### The modern food system relies on satellites. Collapse triggers global shocks to supply.

Tompkins 19 [Steven, Inmarsat’s Director of Sector Development for Agriculture. Head of Resilient and Sustainable Supply Chains Team at ADAS. Entrepreneurial manager with a sustained track record of building new profitable business streams for science-based organizations in the agri-food sector.; 3-18-2019; "Enabling the connected farm – the importance of satellite communications," Inmarsat, <https://www.inmarsat.com/blog/enabling-the-connected-farm-the-importance-of-satellite-communications/>]

The Agri-Tech Revolution, Agriculture 4.0, the smart and connected farm. There is no shortage of buzzwords hinting at a digitalised future, or solutions being touted as game-changing for the global agricultural industry. Commonly claimed benefits include increasing crop yields, and a reduction in input costs and the reliance on manual labour. Many of these solutions rely on reliable internet connectivity in the field to push data from one place to another, but there are still vast swathes of agricultural land that suffer from unreliable or non-existent connectivity, either lacking cellular or broadband connectivity. If we are to take advantage of the huge possibilities available to us, overcoming our connectivity challenges will be crucial. This is where satellite communications can help. When I tell people that I am an agriculturalist working for a satellite company, almost always the response is related to an experience of using space imagery (known as Earth Observation) to help automate processes such as crop scouting. But there is another breed of satellites that don’t produce images but do provide fast and reliable internet and voice communications across the world in areas that cellular and fibre connectivity cannot reach. Ubiquitous connectivity from satellites opens up huge possibilities for farmers in remote areas to take advantage of the Agri-Tech Revolution. In some cases, this is as simple as connecting frontline worker teams in large plantations to operations centres to prioritise workload and create efficiencies. Taking it one step further, satellite communications can be a bridge to enable farmers to connect data producing devices in the field (such as weather stations, sensors, data from farm machinery) to business applications. Known by the tech world as the ‘Internet of Things’ or IoT, this approach collects data from the field and harnesses it to support intelligent decision-making. For instance: obtaining real-time data on nutrient status in the field from NPK (Nitrogen Phosphorous and Potassium) sensors, alongside crop monitoring data and hyper-local weather that would allow you to make completely objective risk-based decisions on when and where to apply fertiliser. We know the industry is taking this proposition seriously – our own research told us that on average agriculture respondents expect to spend close to $1million on IoT solutions in the next three years and 72% of respondents would use satellite technology to support their projects. Of course, satellite isn’t the answer to everything and should be used in tandem with other connectivity types, and the good news is it’s easy to integrate with other connectivity technologies. With increasing demand to connect the physical world to the digital world, in some of the world’s remotest locations think of satellite not just as a series of images taken from space but an enabler to the Agri-Tech Revolution.

#### Food shortages go nuclear.

FDI 12 [FDI; a Research institute providing strategic analysis of Australia’s global interests; citing Lindsay Falvery, PhD in Agricultural Science and former Professor at the University of Melbourne’s Institute of Land and Environment (Future Directions International, , “Food and Water Insecurity: International Conflict Triggers & Potential Conflict Points,” <http://www.futuredirections.org.au/workshop-papers/537-international-conflict-triggers-and-potential-conflict-points-resulting-from-food-and-water-insecurity.html>]

There is a growing appreciation that the conflicts in the next century will most likely be fought over a lack of resources. Yet, in a sense, this is not new. Researchers point to the French and Russian revolutions as conflicts induced by a lack of food. More recently, Germany’s World War Two efforts are said to have been inspired, at least in part, by its perceived need to gain access to more food. Yet the general sense among those that attended FDI’s recent workshops, was that the scale of the problem in the future could be significantly greater as a result of population pressures, changing weather, urbanisation, migration, loss of arable land and other farm inputs, and increased affluence in the developing world. In his book, Small Farmers Secure Food, Lindsay Falvey, a participant in FDI’s March 2012 workshop on the issue of food and conflict, clearly expresses the problem and why countries across the globe are starting to take note. . He writes (p.36), “…if people are hungry, especially in cities, the state is not stable – riots, violence, breakdown of law and order and migration result.” “Hunger feeds anarchy.” This view is also shared by Julian Cribb, who in his book, The Coming Famine, writes that if “large regions of the world run short of food, land or water in the decades that lie ahead, then wholesale, bloody wars are liable to follow.” He continues: “An increasingly credible scenario for World War 3 is not so much a confrontation of super powers and their allies, as a festering, self-perpetuating chain of resource conflicts.” He also says: “The wars of the 21st Century are less likely to be global conflicts with sharply defined sides and huge armies, than a scrappy mass of failed states, rebellions, civil strife, insurgencies, terrorism and genocides, sparked by bloody competition over dwindling resources.” As another workshop participant put it, people do not go to war to kill; they go to war over resources, either to protect or to gain the resources for themselves. Another observed that hunger results in passivity not conflict. Conflict is over resources, not because people are going hungry. A study by the International Peace Research Institute indicates that where food security is an issue, it is more likely to result in some form of conflict. Darfur, Rwanda, Eritrea andthe Balkans experienced such wars. Governments, especially in developed countries, are increasingly aware of this phenomenon. The UK Ministry of Defence, the CIA, the US Center for Strategic and International Studies and the Oslo Peace Research Institute, all identify famine as a potential trigger for conflicts and possibly even nuclear war.

#### Nuke war means extinction

**Germanos 13’** [senior editor staff writer Common Dreams on IPPNW and PSR][“Nuclear War Could Mean ‘Extinction of the Human Race.’” Common Dreams, 10 Dec. 2013, www.commondreams.org/news/2013/12/10/nuclear-war-could-mean-extinction-human-race#:%7E:text=A%20war%20using%20even%20a,people%2C%20a%20new%20report%20warns.&text=The%20updated%20report%20adds%20that,such%20a%20war%20broke%20out.]

A war using even a small percentage of the world's nuclear weapons threatens the lives of two billion people, a new report warns. The findings in the report issued by International Physicians for Prevention of Nuclear War (IPPNW) and Physicians for Social Responsibility (PSR) are based on studies by climate scientists that show how nuclear war would alter the climate and agriculture, thereby threatening one quarter of the world's population with famine. "A nuclear war using only a fraction of existing arsenals would produce massive casualties on a global scale—far more than we had previously believed," Dr. Ira Helfand, the report’s author and IPPNW co-president, said in a statement. As their previous report showed, years after even a limited nuclear war, production of corn in the U.S. and China's middle season rice production would severely decline, and fears over dwindling food supplies would lead to hoarding and increases in food prices, creating further food insecurity for those already reliant on food imports. The updated report adds that Chinese winter wheat production would plummet if such a war broke out. Based on information from new studies combining reductions in wheat, corn and rice, this new edition doubles the number of people they expect to be threatened by nuclear-war induced famine to over two billion. "The prospect of a decade of widespread hunger and intense social and economic instability in the world’s largest country has immense implications for the entire global community, as does the possibility that the huge declines in Chinese wheat production will be matched by similar declines in other wheat producing countries," Helfand stated. The crops would be impacted, the report explains, citing previous studies, because of the black carbon particles that would be released, causing widespread changes like cooling temperatures, decreased precipitation and decline in solar radiation. In this scenario of famine, epidemics of infectious diseases would be likely, the report states, and could lead to armed conflict. From the report: Within nations where famine is widespread, there would almost certainly be food riots, and competition for limited food resources might well exacerbate ethnic and regional animosities. Among nations, armed conflict would be a very real possibility as states dependent on imports attempted to maintain access to food supplies. While a limited nuclear war would bring dire circumstances, the impacts if the world's biggest nuclear arms holders were involved would be even worse. "With a large war between the United States and Russia, we are talking about the possible —not certain, but possible—extinction of the human race," Helfand told Agence-France Presse. "In this kind of war, biologically there are going to be people surviving somewhere on the planet but the chaos that would result from this will dwarf anything we've ever seen," Helfand told the news agency. As Helfand writes, the data cited in the report "raises a giant red flag about the threat to humanity posed." Yet, as Dr. Peter Wilk, former national executive director of PSR writes in an op-ed today, the "threat is of our own creation." As a joint statement by 124 states delivered to the United Nations General Assembly in October stated: "It is in the interest of the very survival of humanity that nuclear weapons are never used again, under any circumstances." "Countries around the world—those who are nuclear-armed and those who are not—must work together to eliminate the threat and consequences of nuclear war," Helfand said. “In order to eliminate this threat, we must eliminate nuclear weapons.”

## Contention 2

#### Our second contention is Russia.

#### Deep space exploration is a shared goal that prevents escalation of US-Russia tensions. However, privatization threatens it independent of our other internal links

CSIS 18 [(Center for Strategic and International Studies), “Why Human Space Exploration Matters,” August 21, 2018 https://www.csis.org/blogs/post-soviet-post/space-cooperation]

U.S.-Russian space cooperation continues to be a stated mutual goal. In April 2018, President Putin said of space, “Thank God, this field of activity is not being influenced by problems in politics. Therefore, I hope that everything will develop, since it is in the interests of everyone…This is a sphere that unites people. I hope it will continue to be this way.” During his statement at a recent event at CSIS, NASA Administrator Jim Bridenstine said, “[space] is our best opportunity to dialogue when everything else falls apart. We’ve got American astronauts and Russian cosmonauts dependent on each other on the International Space Station, which enables us to ultimately maintain that dialogue.” The U.S. and Russia both benefit from the ISS partnership. Russia provides transportation to the ISS for U.S. astronauts, from which Russia receives an average of $81 million per seat on the Soyuz (and recognition of its status as a space power). The U.S. also benefits from Russia’s technical contributions to the ISS while Russia benefits The U.S. and Russia signed a joint statement in 2017 in support of the idea of collaborating on deep space exploration, including the construction of the Lunar Orbital Platform-Gateway, a research-focused space station orbiting the moon. Through agreements on civilian space exploration, such as the Lunar Orbital Platform-Gateway or future Mars projects, that have clear benefits to both sides, some degree of cooperation will remain in both countries’ interest. The high price tag for pursuing space exploration alone and opportunities for sharing and receiving technical expertise encourages international partnerships like the ISS. However, at least three factors, apart from the overall deterioration of U.S.-Russia relations, threaten this cooperation. First, growth of the private sector space industry may alter the economic arrangement between the U.S. and Russia, and ultimately lower the benefits of cooperation to both countries. The development of advanced technologies by private companies will give NASA new options to choose from and reduce the need to depend on (and negotiate with) Russia. If NASA and its Russian counterpart, Roskosmos, have no need to talk with one another, they probably won’t in the face of tense political relations. The U.S. intends to use Boeing and SpaceX capsules for human spaceflight beginning in 2020, and a Congressional plan in 2016 set a phase out date of Russian RD-180 rocket engines by 2022.

#### Space missions prove vital for cooperation between Russia and the US. Biden and Putin know this, and first steps are being made.

Luxmoore, 11/03, U.S. and Russia Find Some Common Ground—in Space, https://foreignpolicy.com/2021/11/03/us-russia-space-cooperation-nasa-sirius/, Foreign Policy,

MOSCOW—Ashley Kowalski has spent much of her career advancing international space cooperation at the nonprofit Aerospace Corporation in California, most recently as a project manager. Now, the 32-year-old American is going to put her passion to the test—by locking herself in a hermetically sealed capsule with five strangers for an eight-month simulated mission to space. “Throughout my life I’ve tried to marry my work in the space industry with my love for different cultures,” said Kowalski, who has done previous fellowships in Germany, Russia, and China. “So this program stood out for me.” On Nov. 4, Kowalski will join one other American, three Russians, and an Emirati inside the confined facility in a Soviet-era building on the outskirts of Moscow that’s meant to mimic as much as possible the conditions on long space journeys, including both the physiological and the psychological challenges. A barrage of daily tests will record the changes the aspiring astronauts undergo and relay the data to a team of researchers at Moscow’s Institute of Biomedical Problems, which has teamed up with NASA to launch the Scientific International Research in Unique Terrestrial Station, or SIRIUS. The project is meant to gather data on how people cope physically and mentally with long-term confinement, a necessary prelude to longer space journeys to the moon or even Mars; the data will be made available to various space agencies. The international component of the experiment is important, because scientists hope that international crews working together on land could smooth the path to eventual joint exploration of Mars. SIRIUS and similar experiments not only could pave the way for future joint missions but also show how 30 years after the end of the Cold War, and amid sharply rising tensions between Washington and Moscow, space remains a rare field of cooperation. The United States depended on Russia for years to deliver its astronauts to the International Space Station (ISS), an arrangement that bolstered Russia’s reputation as a reliable partner and ensured a steady revenue stream. In April, Russia extended its space cooperation agreement with the United States until 2030, ensuring joint work on the ISS will continue. But that has been overshadowed in recent years by Russia’s adventurism in Europe, meddling in U.S. elections, devastating cyberattacks against U.S. targets, use of the energy weapon to choke Europe, and a sudden breakdown in relations between Russia and NATO this fall. In June, at a bilateral summit in Geneva, U.S. President Joe Biden and Russian President Vladimir Putin zeroed in on common interests such as cybersecurity and arms control as a way of maintaining some cooperation, and the Biden administration has [continued](https://www.nytimes.com/2021/10/31/world/europe/biden-putin-russia-united-states.html) to look for ways to reduce tension; space also fits the bill perfectly. “There are areas where there’s a mutual interest for us to cooperate, for our people—Russian and American people—but also for the benefit of the world,” Biden said after the summit. Six folks in a tube may not be enough to defuse all the tensions between the two geopolitical rivals. But for those going inside—and the scientists watching from the outside—the stakes are still high. Humans have evolved over hundreds of millennia to thrive in an environment with oxygen, water, and gravity. NASA has spent years conducting earthbound experiments to see what happens when those basic conditions are missing, including paying people to lie in bed for months and experience the effects of muscle loss and bone degradation, which accelerates rapidly in an atmosphere of weightlessness. The SIRIUS volunteers won’t have to worry about either weightlessness or cosmic radiation. But the simulation offers them a chance to prove they have the right stuff and could meet at least some of the criteria for future travel to space. “The process is somewhat similar to astronaut selection,” said Igor Kofman of NASA’s Human Research Program, which chose the two U.S. participants and two backups for this year’s mission, known as SIRIUS-21, from a pool of hundreds of candidates. In the past, far less attention was paid to the mental well-being of the Mercury, Gemini, and Apollo crews who pioneered early space exploration in the 1960s and 1970s. With longer missions on the horizon, a good psychological fit becomes even more important. The current crop of volunteers is being evaluated on their ability to adapt to new situations they cannot change, tolerance for isolation and confinement, and the unflappability required to spend extended periods of time with relative strangers. Reinhold Povilaitis, a participant in the four-month SIRIUS mission in 2019 and now an employee of NASA’s Human Research Program, said he found it hard initially to adapt to the customs of his crew members, like the constant tea-drinking sessions of the Russians. “They may have bonded prior to going in, but they haven’t lived together,” he said of the current crop of volunteers. “And what they can tolerate at the beginning might not be the same at the end. So they find balance, hopefully, in the course of eight months.” “This is a stressful situation,” said Oleg Blinov, a 43-year-old Russian space industry worker who will serve as captain of SIRIUS-21 and be responsible for safeguarding a sociable atmosphere among members of the crew and resolving any conflicts. “If we don’t remain upbeat, it’ll be difficult to get through it.” Many previous ground simulations had only American participants, but Kofman said the international crew of SIRIUS-21 likely reflects the space crews of the future. “We’re hoping future missions will be multicultural,” he said. “That’s why it’s important to simulate those parameters and those conditions.” Those conditions include plenty of physical discomforts to go with the isolation. Most of the time an astronaut spends on the ISS is spent assembling and maintaining the spacecraft, and the SIRIUS-21 volunteers will be subject to a daily schedule that is timed to the minute and designed to counteract boredom and mimic the workload of a real space flight. Exercise is daily; showers are once a week. Food rations include freeze-dried meals and powdered substances that solidify when mixed with hot water, and bathrooms are around the size of those on a Russian train. Communication with friends and family will be limited to an occasional email. “This means being away from your family, from home comforts. That’s the sacrifice,” said Abdalla al-Hammadi, 35, a former Emirati test pilot and father of two who was chosen from around 1,000 applicants to take part in SIRIUS. The United Arab Emirates has a burgeoning space sector and plans to send its first astronauts to Mars in 2117. Hammadi hopes his involvement with SIRIUS will increase his grandson’s or great-grandson’s chances of being on that Mars mission. “I am giving this to my son, my son will give it to his son, and it will carry on,” he said. (Just before the experiment started, Hammadi learned that another Emirati volunteer would take his spot, and he would act as a backup.) The UAE’s ambitions represent a shifting of the center of gravity in the space race. Russia for decades was one of the dominant powers, and even more so after the United States wound down its Space Shuttle program. But last year, SpaceX completed the first manned orbital flight from U.S. soil in almost a decade, breaking Russia’s monopoly and ushering in a new era of competition. Delivering astronauts to space on a rocket designed and manufactured by a private U.S. company, the SpaceX launch culminated a decadeslong effort to transform space into a new sphere of capitalist competition and rattled dominant Russian state enterprises that had inherited Soviet technology. (But not Soviet-level budgets: In 2020, the [budget](https://tass.ru/ekonomika/7734535) of Russian space agency Roscosmos was around $2.4 billion at current exchange rates; NASA’s was $22.6 billion.) “From a historical point of view, Russia played a major role in space. But from today’s perspective, its influence is rapidly waning,” said Ivan Moiseyev, head of the Institute of Space Policy in Moscow. “The U.S. is an economic powerhouse in space, and Europe and China are beginning to exceed Russia in their potential.” The end goal for most of the volunteers is to participate in a real orbital flight in the years to come, with SIRIUS a preview of that ultimate challenge. But if the space simulation is not enough to qualify them, it’s all in the name of advancing science, too. “This is probably the largest amount of data from an analog data study that anybody has ever collected,” Kowalski said. “At the end of the day, we’re doing something that’ll help human space flight. Maybe being an astronaut is not part of my future, maybe I don’t stay in the space industry. But at least I know that I was part of something bigger.”

#### It’s make or break for the relationship – Ukraine tensions and the decline of US authority put us at the brink of war. The plan is key to prevent this.

Weir 21 [(Fred Weir has been the Monitor's Moscow correspondent, covering Russia and the former Soviet Union, since 1998. He's traveled over much of that vast territory, reporting on stories ranging from Russia's financial crash to the war in Chechnya, creeping Islamization in central Asia, Russia's demographic crisis, the rise of Vladimir Putin and his repeated returns to the Kremlin, and the ups and downs of US-Russia relations). “Worse than the Cold War? US-Russia relations hit new low.“ Christian Science Monitor 4-20-2021 https://www.csmonitor.com/World/Europe/2021/0420/Worse-than-the-Cold-War-US-Russia-relations-hit-new-low]

Russia’s relations with the West, and the United States in particular, appear to be plumbing depths of acrimony and mutual misunderstanding unseen even during the original Cold War.After years of deteriorating relations, sanctions, tit-for-tat diplomatic expulsions, and an escalating “information war,” some in Moscow are asking if there even is any point in seeking renewed dialogue with the U.S., if only out of concern that more talking might just make things worse. Events have cascaded over the past month. Russia’s treatment of imprisoned dissident Alexei Navalny, who has been sent to a prison hospital amid reports of failing health, underlines the sharp perceived differences between Russia and the West over matters of human rights. Meanwhile, a Russian military buildup near Ukraine has illustrated that the conflict in the Donbass region might explode at any time, possibly even dragging Russia and NATO into direct confrontation. With its relations with Washington at a nadir, Russia is eyeing a more pragmatic, if adversarial, relationship with the U.S. in the hopes of getting the respect it desires. President Joe Biden surprised the Kremlin by proposing a “personal summit” to discuss the growing list of U.S.-Russia disagreements in a phone conversation with Vladimir Putin last week. He later spoke of the need for “disengagement” in the escalating tensions around Ukraine, and postponed a planned visit of two U.S. warships to Russia-adjacent waters in the Black Sea. But days later he also imposed a package of tough sanctions against Russia, for its alleged SolarWinds hacking and interference in the 2020 U.S. presidential elections, infuriating Moscow and drawing threats of retaliation. Last month, after Mr. Biden agreed with a journalist’s intimation that Mr. Putin is a “killer,” the Kremlin ordered Russia’s ambassador to the U.S. to return home for intensive consultations, an almost unprecedented peacetime move. Over the weekend, Russian Foreign Minister Sergey Lavrov suggested that the acting U.S. ambassador to Moscow, John Sullivan, should likewise go back to Washington for a spell. On Tuesday, Mr. Sullivan announced he would do just that this week. And there is a growing sense in Moscow that the downward spiral of East-West ties has reached a point of no return, and that Russia should consider abandoning hopes of reconciliation with the West and seek permanent alternatives: perhaps in an intensified compact with China, and targeted relationships with countries of Europe and other regions that are willing to do business with Moscow. “Things are at rock bottom. This may not be structurally a cold war in the way the old one was, but mentally, in terms of atmosphere, it’s even worse,” says Fyodor Lukyanov, editor of Russia in Global Affairs, a Moscow-based foreign policy journal. “The fact that Biden offered a summit meeting would have sounded a hopeful note anytime in the past. Now, nobody can be sure of that. A hypothetical Putin-Biden meeting might not prove to be a path to better relations, but just the opposite. It could just become a shouting match that would bring a hardening of differences, and make relations look like even more of a dead end.” Room for discussion Foreign policy experts agree that there is a long list of practical issues that could benefit from purposeful high-level discussion. With the U.S. preparing to finally exit Afghanistan, some coordination with regional countries, including Russia and its Central Asian allies, might make the transition easier for everyone. One of Mr. Biden’s first acts in office was to extend the New START arms control agreement, which the Trump administration had been threatening to abandon, but the former paradigm of strategic stability remains in tatters and requires urgent attention, experts say. “If you are looking for opportunities to make the world a safer place through reason and compromise, there are quite a few,” says Andrey Kortunov, director of the Russian International Affairs Council, which is affiliated with the Foreign Ministry. “There are also some areas where the best we could do is agree to disagree, such as Ukraine and human rights issues.” The plight of Mr. Navalny, which has evoked so much outrage in the West, seems unlikely to provide leverage in dealing with the Kremlin because – as Western moral authority fades – Russian public opinion appears indifferent, or even in agreement with its government’s actions. Recent surveys by the Levada Center in Moscow, Russia’s only independent pollster, found that fewer than a fifth of Russians approve of Mr. Navalny’s activities, while well over half disapprove. An April poll found that while 29% of Russians consider Mr. Navalny’s imprisonment unfair, 48% think it is fair. Russian opposition figure Alexei Navalny, shown here during a hearing in the Babuskinsky District Court in Moscow Feb. 12, 2021, is in poor health amid his hunger strike while in prison in Russia. He was recently moved to a prison hospital. Tensions around the Russian-backed rebel republics in eastern Ukraine have been much severer than usual, with a spike in violent incidents on the front line, a demonstrative Russian military buildup near the borders, and strong U.S. and NATO affirmations of support for Kyiv. The Russian narrative claims that Ukrainian President Volodymyr Zelenskiy triggered the crisis a month ago by signing a decree that makes retaking the Russian-annexed territory of Crimea official Ukrainian state policy. Mr. Zelenskiy has also appealed to the U.S. and Europe to expedite Ukraine’s membership in NATO, which Russia has long described as a “red line” that would lead to war. But Russian leaders, who have been at pains to deny any direct involvement in Ukraine’s war for the past seven years, now say openly that they will fight to defend the two rebel republics. Top Kremlin official Dmitry Kozak even warned that if conflict erupts, it could be “the beginning of the end” for Ukraine. “This is a very desperate situation,” says Vadim Karasyov, director of the independent Institute of Global Strategies in Kyiv. “We know the West is not going to help Ukraine militarily if it comes to war. So we need to find some kind of workable compromises, not more pretexts for war.” Time to turn eastward? In this increasingly vexed atmosphere, the Russians appear to be saying there is no point in Mr. Putin and Mr. Biden meeting unless an agenda has been prepared well in advance, setting out a few achievable goals and leaving aside areas where there can be no agreement. “Russia isn’t going to take part in another circus like we had with Trump in Helsinki in 2018,” says Sergei Markedonov, an expert with MGIMO University in Moscow. “What is needed is a deeper dialogue. That could begin if we had a real old-fashioned summit between Biden and Putin, one that has been calculated to yield at least some positive results. We need to find a modus vivendi going forward, and the present course is not leading there.” Alternatively, Russia may turn away from any hopes of even pragmatic rapprochement with the West, experts warn. Mr. Lukyanov, who maintains close contact with his Chinese counterparts, says they felt blindsided at a summit with U.S. foreign policy chiefs in Alaska last month, when what they expected to be a practical discussion of how to overcome the acrimonious Trump-era legacy in their relations turned into what they saw as a U.S. lecture about how China needs to obey the “rules-based” international order. “It was the Chinese, in the past, who were very cautious about participating” in anything that looked like an anti-Western alliance, says Mr. Lukyanov. “We are hearing a new tone from them now. Now our growing relationship with China isn’t just about compensating for a lack of relations with the U.S. It’s about the need to build up a group of countries that will resist the U.S., aimed at containing U.S. activities and policies that are harmful to our two countries.”

#### Tensions and war will go nuclear.

**Marrow and Trevelyan 21’** (“Russia says it may be forced to deploy mid-range nuclear missiles in Europe”, Alexander Marrow and Mark Trevelyan, 12/13/2021, https://www.reuters.com/world/russia-says-lack-nato-security-guarantees-would-lead-confrontation-ria-2021-12-13/)

MOSCOW, Dec 13 (Reuters) – **Russia** said on Monday it may be **forced to deploy** intermediate-range **nuclear missiles** in Europe **in response** to what it sees as NATO's plans to do the same. The warning from Deputy Foreign Minister Sergei Ryabkov **raised the risk of a new arms build-up** on the continent, **with East-West tensions at their worst** since the Cold War ended three decades ago. Ryabkov said **Russia would be forced to act** if the West declined to join it in a moratorium on intermediate-range nuclear forces (INF) in Europe - part of a package of security guarantees it is seeking as the price for defusing the crisis over Ukraine. **Lack of** progress towards **a** political and diplomatic **solution would lead Russia to respond** in a military way, **with military technology**, Ryabkov told Russia's RIA news agency. "That is, it will be a confrontation, this will be the next round," he said, referring to the potential deployment of the missiles by Russia. Intermediate-range nuclear weapons - those with a range of 500 to 5,500 km (310 to 3,400 miles) - were banned in Europe under a 1987 treaty between then-Soviet leader Mikhail Gorbachev and U.S. President Ronald Reagan in what was hailed at the time as a major easing of Cold War tensions. By 1991, the two sides had destroyed nearly 2,700 of them. Washington withdrew from the pact in 2019 after complaining for years of alleged violations revolving around **Russia's development of a** ground-launched **cruise missile** that Moscow calls the 9M729 and NATO refers to as **the "Screwdriver.”** If NATO is right that **Russia has already deployed this** system in the European part of the country, west of the Ural Mountains, then Ryabkov's threat is an empty one, according to Gerhard Mangott, an expert on Russian foreign policy and arms control at the University of Innsbruck in Austria. But if Russia's denials are true, he said, then Moscow's warning is "the final signal to NATO that it should enter into talks with Russia about a freeze-freeze agreement.” He added: "If NATO sticks with the position not to negotiate about a deal, then **we will certainly see Russia deploy the** **Screwdriver** **missile** at its very western border.” POINT MAN Ryabkov has emerged in recent days as one of Moscow's key messengers as President Vladimir Putin presses for Western security guarantees while facing warnings from the United States and its allies to back away from a possible invasion of Ukraine - something the minister again denied was Russia's intention. He repeated **a comparison** he made last week **between** the **current tensions and the Cuban missile crisis** of 1962, which brought the United States and Soviet Union to **the brink of nuclear war**. Ryabkov said there were "indirect indications" that **NATO was moving closer to** re-**deploying intermediate-range missiles**, including its restoration last month of the 56th Artillery Command which operated nuclear-capable Pershing missiles during the Cold War. NATO says there will be no new U.S. missiles in Europe and it is ready to deter new Russian missiles with a "measured" response that would only involve conventional weapons. But Ryabkov said **Russia had a "complete lack of trust”** in the alliance. "They don't permit themselves to do anything that could somehow increase our security - they believe they can act as they need, to their advantage, and we simply have to swallow all this and deal with it. This is not going to continue.”

#### Nuke war, especially with Russia, would mean extinction.

**Germanos 13’** [senior editor staff writer Common Dreams on IPPNW and PSR][“Nuclear War Could Mean ‘Extinction of the Human Race.’” Common Dreams, 10 Dec. 2013, www.commondreams.org/news/2013/12/10/nuclear-war-could-mean-extinction-human-race#:%7E:text=A%20war%20using%20even%20a,people%2C%20a%20new%20report%20warns.&text=The%20updated%20report%20adds%20that,such%20a%20war%20broke%20out.]

A war using even a small percentage of the world's nuclear weapons threatens the lives of two billion people, a new report warns. The findings in the report issued by International Physicians for Prevention of Nuclear War (IPPNW) and Physicians for Social Responsibility (PSR) are based on studies by climate scientists that show how nuclear war would alter the climate and agriculture, thereby threatening one quarter of the world's population with famine. "A nuclear war using only a fraction of existing arsenals would produce massive casualties on a global scale—far more than we had previously believed," Dr. Ira Helfand, the report’s author and IPPNW co-president, said in a statement. As their previous report showed, years after even a limited nuclear war, production of corn in the U.S. and China's middle season rice production would severely decline, and fears over dwindling food supplies would lead to hoarding and increases in food prices, creating further food insecurity for those already reliant on food imports. The updated report adds that Chinese winter wheat production would plummet if such a war broke out. Based on information from new studies combining reductions in wheat, corn and rice, this new edition doubles the number of people they expect to be threatened by nuclear-war induced famine to over two billion. "The prospect of a decade of widespread hunger and intense social and economic instability in the world’s largest country has immense implications for the entire global community, as does the possibility that the huge declines in Chinese wheat production will be matched by similar declines in other wheat producing countries," Helfand stated. The crops would be impacted, the report explains, citing previous studies, because of the black carbon particles that would be released, causing widespread changes like cooling temperatures, decreased precipitation and decline in solar radiation. In this scenario of famine, epidemics of infectious diseases would be likely, the report states, and could lead to armed conflict. From the report: Within nations where famine is widespread, there would almost certainly be food riots, and competition for limited food resources might well exacerbate ethnic and regional animosities. Among nations, armed conflict would be a very real possibility as states dependent on imports attempted to maintain access to food supplies. While a limited nuclear war would bring dire circumstances, the impacts if the world's biggest nuclear arms holders were involved would be even worse. "With a large war between the United States and Russia, we are talking about the possible —not certain, but possible—extinction of the human race," Helfand told Agence-France Presse. "In this kind of war, biologically there are going to be people surviving somewhere on the planet but the chaos that would result from this will dwarf anything we've ever seen," Helfand told the news agency. As Helfand writes, the data cited in the report "raises a giant red flag about the threat to humanity posed." Yet, as Dr. Peter Wilk, former national executive director of PSR writes in an op-ed today, the "threat is of our own creation." As a joint statement by 124 states delivered to the United Nations General Assembly in October stated: "It is in the interest of the very survival of humanity that nuclear weapons are never used again, under any circumstances." "Countries around the world—those who are nuclear-armed and those who are not—must work together to eliminate the threat and consequences of nuclear war," Helfand said. “In order to eliminate this threat, we must eliminate nuclear weapons.”

#### Thus, I proudly affirm and urge a ballot in affirmation, as it is to try or die.