### NC Util FW

#### MY STANDARD is maximizing pleasure from expected consequences. Prefer –

#### [1] Phenomenal Introspection – We can all tell the objective goodness of pleasure and badness of pain – that’s sufficient for action. Nagel 86 Brackets for Gender

Thomas Nagel. The View From Nowhere, HUP, 1986: 156-168.

“Almost **everyone takes the avoidance of** his own **pain and the promotion** of his own **pleasure as subjective reasons for action** in a fairly simple way; they are not back up by any further reasons. On the other hand if someone pursues pain or avoids pleasure, either it as a means to some end or it is backed up by dark reasons like guilt or sexual masochism. What sort of general value, if any, ought to be assigned to pleasure and pain when we consider these facts from an objective standpoint? What kind of judgment can we reasonably make about these things when we view them in abstraction from who we are? **We can begin by asking why there is no plausibility in the zero position, that pleasure and pain have no value of any kind that can be objectively recognized. That would mean that I have no reason to take aspirin for a severe headache**, however I may in fact be motivated; and that looking at it from outside, **you couldn't even say that someone had a reason not to put [their] his hand on a hot stove, just because of the pain.** Try looking at it from the outside and see whether you can manage to withhold that judgment. If the idea of objective practical reason makes any sense at all, so that there is some judgment to withhold, it does not seem possible. If the general arguments against the reality of objective reasons are no good, then it is at least possible that I have a reason, and not just an inclination, to refrain from putting my hand on a hot stove.,”

#### [2] Actor specificity

#### [3] Physicalism is true and leads to util – ignore non-material circumstances. Papineau 09

Papineau, David, "Naturalism", The Stanford Encyclopedia of Philosophy (Spring 2009 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2009/entries/naturalism/>.

In the middle of the nineteenth century the conservation of kinetic plus potential energy came to be accepted as a basic principle of physics (Elkana 1974). In itself this does not rule out distinct mental or vital forces, for there is no reason why such forces should not be ‘conservative’, operating in such a way as to compensate losses of kinetic energy by gains in potential energy and vice versa. (The term ‘nervous energy’ is a relic of the widespread late nineteenth-century assumption that mental processes store up a species of potential energy that is then released in action.) However, the **conservation of energy** does **imply**  that any such special forces must be governed by strict **deterministic laws:** if mental or vital forces arose spontaneously, then there would be nothing to ensure that they never led to energy increases. During the course of the twentieth century received scientific opinion became even more restrictive about possible causes of physical effects, and came to reject sui generis mental or vital causes, even of a law-governed and predictable kind. Detailed physiological **research,** especially **in**to **nerve cells, gave no indication of** anyphysical **effects that cannot be explained** in terms of basic **physical forces that** also **occur outside** living bodies. By the middle of the twentieth century, belief in sui generis mental or vital forces had become a minority view. **This led to** the widespread acceptance of the doctrine now known as the **‘causal closure’** or the ‘causal completeness’ of the physical realm, according to which **all** physical **effects** **can be accounted for by** basic **physical causes** (where ‘physical’ can be understood as referring to some list of fundamental forces) non-physical causes of physical effects. As a result, the default philosophical view was a non-naturalist interactive pluralism which recognized a wide range of such non-physical influences, including spontaneous mental influences (or ‘determinations of the soul’ as they would then have been called). The nineteenth-century discovery of the conservation of energy continued to allow that sui generis non-physical forces can interact with the physical world, but required that they be governed by strict force laws. This gave rise to an initial wave of naturalist doctrines around the beginning of the twentieth century. Sui generis mental forces were still widely accepted, but an extensive philosophical debate about the significance of the conservation of energy led to a widespread recognition that any such mental forces would need to be law-governed and thus amenable to scientific investigation along with more familiar physical forces.[5] By the middle of the twentieth century, the acceptance of the casual closure of the physical realm led to even stronger naturalist views. The causal closure thesis implies that any **mental** and biological causes **must** themselves **be physical**ly constituted**, if they are to produce** physical **effects.** It thus gives rise to a particularly strong form ofontological naturalism, namely the physicalist doctrine that any state that has physical effects must itself be physical. From the 1950s onwards, philosophers began to formulate arguments for ontological physicalism. Some of these arguments appealed explicitly to the causal closure of the physical realm (Feigl 1958, Oppenheim and Putnam 1958). In other cases, the reliance on causal closure lay below the surface. However, it is not hard to see that even in these latter cases the causal closure thesis played a crucial role. Thus, for example, consider J.J.C. Smart's (1958) thought that we should identify mental states with brain states, for otherwise those mental states would be "nomological danglers" which play no role in the explanation of behaviour. Or take David Lewis's (1966) and David Armstrong's (1968) argument that, since mental states are picked out by their causal roles, and since we know that physical states play these roles, mental states must be identical with those physical states. Again, consider Donald Davidson's (1970) argument that, since the only laws governing behaviour are those connecting behaviour with physical antecedents, mental events can only be causes of behaviour if they are identical with those physical antecedents. At first sight, it may not be obvious that these arguments require the causal closure thesis. But a moment's thought will show that none of these arguments would remain cogent if the closure thesis were not true, and that some physical effects (the movement of matter in arms, perhaps, or the firings of the motor neurones which instigate those movements) were not determined by prior physical causes at all, but by sui generis mental causes. Sometimes it is suggested that the indeterminism of modern quantum mechanics creates room for sui generis non-physical causes to influence the physical world. However, even if quantum mechanics implies that some physical effects are themselves undetermined, it provides no reason to doubt a quantum version of the causal closure thesis, to the effect that the chances of those effects are fully fixed by prior physical circumstances. And this alone is enough to rule out sui generis non-physical causes. For such sui generis causes, if they are to be genuinely efficiacious, must presumably make an independent difference to the chances of physical effects, and this in itself would be inconsistent with the quantum causal closure claim that such chances are already fixed by prior physical circumstances. Once more, it seems that anything that makes a difference to the physical realm must itself be physical. Even if it is agreed that anything with physical effects must in some sense be physical, there is plenty of room to debate exactly what ontologically naturalist doctrines follow. The causal closure thesis says that (the chance of) every physical effect is fixed by a fully physical prior history. So, to avoid an unacceptable proliferation of causes, any prima facie non-physical cause of a physical effect will need to be included in that physical history. But what exactly does this require? The contemporary literature offers a wide range of answers to this question. In part the issue hinges on the ontological status of causes. Some philosophers think of causes as particular events, considered in abstraction from any properties they may possess (Davidson 1980). Given this view of causation, a mental or other apparently non-physical cause will be the same as some physical cause as long as it is constituted by the same particular (or ‘token’) event. For example, a given feeling and a given brain event will count as the same cause as long as they are constituted by the same token event. However, it is widely agreed that this kind of ‘token identity’ on its own fails to ensure that prima facie non-physical causes can make any real difference to physical effects. To see why, note that token identity is a very weak doctrine: it does not imply any relationship at all between the properties involved in the physical and non-physical cause; it is enough that the same particular entity should possess both these properties. Compare the way in which an apple's shape and colour are both possessed by the same particular thing, namely that apple. It seems wrong to conclude on this account that the apple's colour causes what its shape causes. Similarly, it seems unwarranted to conclude that someone's feelings cause what that person's neuronal discharges cause, simply on the grounds that these are both aspects of the same particular event. This could be true, and yet the mental property of the event could be entirely irrelevant to any subsequent physical effects. Token identity on its own thus seems to leave it open that the mental and other prima facie non-physical properties are ‘epiphenomenal’, exerting no real influence on effects that are already fixed by physical processes (Honderich 1982, Yalowitz 2006 Section 6, Robb and Heil 2005 Section 5). These considerations argue that causation depends on properties as well as particulars. There are various accounts of causation that respect this requirement, the differences between which do not matter for present purposes. The important point is that, if mental and other prima facie non-physical causes are to be equated with physical causes, [any] non-physical properties must somehow be constituted by physical properties. If your anger is to cause what your brain state causes, the property of being angry cannot be ontologically independent of the relevant brain properties. So much is agreed by nearly all contemporary naturalists. At this point, however, consensus ends. One school holds that epiphenomenalism can only be avoided by type-identity, the strict identity of the relevant prima facie non-physical properties with physical properties. On the other side stand ‘non-reductive’ physicalists, who hold that the causal efficacy of non-physical properties will be respected as long as they are ‘realized by’ physical properties, even if they are not reductively identified with them. Type-identity is the most obvious way to ensure that non-physical and physical causes coincide: if exactly the same particulars and properties comprise a non-physical and a physical cause, the two causes will certainly themselves be fully identical. Still, type-identity is a very strong doctrine. Type identity about thoughts, for example, would imply that the property of thinking about the square root of two is identical with some physical property. And this seems highly implausible. Even if all human beings with this thought must be distinguished by some common physical property of their brains—which itself seems highly unlikely—there remains the argument that other life-forms, or intelligent androids, will also be able to think about the square root of two, even though their brains may share no significant physical properties with ours (cf. Bickle 2006). This ‘variable realization’ argument has led many philosophers to seek an alternative way of reconciling the efficacy of non-physical causes with the causal closure thesis, one which does not require the strict identity of non-physical and physical properties. The general idea of this ‘non-reductive physicalism’ is to allow that a given non-physical property can be ‘realized’ by different physical properties in different cases. There are various ways of filling out this idea. A common feature is the requirement that non-physical properties should metaphysically supervene on physical properties, in the sense that any two beings who share all physical properties will necessarily share the same non-physical properties, even though the physical properties which so realize the non-physical ones can be different in different beings. This arguably ensures that nothing more is required for any specific instantiation of a non-physical property than its physical realization—even God could not have created your brain states without thereby creating your feelings—yet avoids any reductive identification of non-physical properties with physical ones. (This is a rough sketch of the supervenience formulation of physicalism. For more see Stoljar 2001 Sections 2 and 3.) Some philosophers object that non-reductive physicalism does not in fact satisfy the original motivation for physicalism, since it fails to reconcile the efficacy of non-physical causes with the causal closure thesis (Kim 1993. Robb and Heil 2005 Section 6). According to non-reductive physicalism, prima facie non-physical properties are not type-identical with any strictly physical properties, even though they supervene on them. However, if causes are in some way property-involving, this then seems to imply that any prima facie non-physical cause will be distinct from any physical cause. Opponents of non-reductive physicalism object that this gives us an unacceptable proliferation of causes for the physical effects of non-physical causes—both the physical cause implied by the causal closure thesis and the distinct non-physical cause. In response, advocates of non-reductive physicalism respond that there is nothing wrong with such an apparent duplication of causes if it is also specified that the latter metaphysically supervene on the former. The issue here hinges on the acceptability of different kinds of overdetermination (Bennett 2003). All can agree that it would be absurd if the physical effects of non-physical causes always had two completely independent causes. This much was assumed by the original causal argument for physicalism, which reasoned that no sui generis non-physical state of affairs can cause some effect that already has a full physical cause. However, even if ‘strong overdetermination’ by two ontologically independent causes is so ruled out, this does not necessarily preclude ‘weak overdetermination’ by both a physical cause and a metaphysically supervenient non-physical cause. Advocates of non-reductive physicalism argue that this kind of overdetermination is benign, on the grounds that the two causes are not ontologically distinct—the non-physical cause isn't genuinely additional to the physical cause (nothing more is needed for your feelings than your brain states). There is room to query whether non-reductive physicalism amounts to a substantial form of naturalism. After all, the requirement that some category of properties metaphysically supervenes on physical properties is not a strong one. A very wide range of properties would seem intuitively to satisfy this requirement, including moral and aesthetic properties, along with any mental, biological, and social properties. (Can two physically identical things be different with respect to wickedness or beauty?) Supervenience on the physical realm is thus a far weaker requirement than that some property should enter into natural laws, say, or be analysable by the methods of the natural sciences. Indeed some philosophers are explicitly anti-naturalist about categories that they allow to supervene on the physical—we need only think of G.E. Moore on moral properties, or Donald Davidson and his followers on mental properties (Moore 1903, Davidson 1980). In response, those of naturalist sympathies are likely to point out that any viable response to the argument from causal closure will require more than metaphysical supervenience alone (Horgan 1993, Wilson 1999). Supervenience is at least necessary, if non-reductive physicalists are to avoid the absurdity of strong overdetermination. But something more than mere supervenience is arguably needed if non-reductive physicalists are to make good their claim that non-physical states cause the physical effects that their realizers cause. Metaphysical supervenience alone does not ensure this. (Suppose ricketiness, in a car, is defined as the property of having some loose part. Then ricketiness will supervene on physical properties. In a given car, it may be realized by a disconnected wire between ignition and starter motor.This disconnected wire will cause this car not to start. But it doesn't follow that this car's then not starting will be caused by its property of ricketiness. Most rickety cars start perfectly well.) So it looks as if the causal closure argument requires not only that non-physical properties metaphysically supervene on physical properties, but that they be natural in some stronger sense, so as to qualify as causes of those properties' effects. It is a much-discussed issue how this demand can be satisfied. Some philosophers seek to meet it by offering a further account of the nature of the relevant non-physical properties, for example, that they are second-order role properties whose presence is constituted by some first-order property with a specified causal role (Levin 2004). Others suggest that the crucial feature is how these properties feature in certain laws (Fodor 1974) or alternatively the degree of their explanatory relevance to physical effects (Yablo 1992). And reductive physicalists will insist that the demand can only be met by type-identifying prima-facie non-physical properties with physical properties after all.[6] There is no agreed view on the requirements for prima facie non-physical properties to have physical effects. This difficult issue hinges, inter alia, on the nature of the causal relation itself, and it would take us too far afield to pursue it further here. For the purpose of this entry, we need only note that the causal closure argument seems to require that properties with physical effects must be ‘natural’ in some sense that is stronger than metaphysical supervenience on physical properties. Beyond that, we can leave it open exactly what this extra strength requires. Some philosophers hold that mental states escape the causal argument, on the grounds that mental states cause actions rather than any physical effects. Actions are not part of the subject matter of the physical sciences, and so a fortiori not the kinds of effects guaranteed to have physical causes by any casual closure thesis. So there is no reason, according to this line of thought, to suppose that the status of mental states as causes of actions is threatened by physics, nor therefore any reason to think that mental states must in some sense be realized by physical states (Hornsby 1997, Sturgeon 1998). The obvious problem with this line of argument is that actions aren't the only effects of mental states. On occasion mental states also cause unequivocally physical effects. Fast Eddie Felsen's desire to move a pool ball in a certain direction will characteristically have just that effect. And now the causal closure argument bites once more. The snooker ball's motion has a purely physical cause, by the causal closure thesis. This will pre-empt Fast Eddie's desire as a cause of that motion, unless that desire is in some sense physically realized (Balog 1999, Witmer 2000). Other philosophers have a different reason for saying that mental states, or more particularly conscious mental states, don't have physical effects. They think that there are strong independent arguments to show that conscious states can't possibly supervene metaphysically on physical states. Putting this together with the closure claim that physical effects always have physical causes, and abjuring the idea that the physical effects of conscious causes are strongly overdetermined by both a physical cause and an ontologically independent conscious cause, they conclude that conscious states must be ‘epiphenomenal’, lacking any power to causally influence the physical realm (Jackson 1981; 1985. See also Chalmers 1995).[7] The rejection of physicalism about conscious properties certainly has the backing of intuition. (Don't zombies—beings who are physically exactly like humans but have no conscious life—seem intuitively possible?) However, whether this intuition can be parlayed into a sound argument is a highly controversial issue, and one that lies beyond the scope of this entry. A majority of contemporary philosophers probably hold that physicalism can resist these arguments. But a significant minority take the other side.[8] If the majority are right, and physicalism about conscious states is not ruled out by independent arguments, then physicalism seems clearly preferable to epiphenomenalism. In itself, epiphenomenalism is not an attractive position. It requires us to suppose that conscious states, even though they are caused by processes in the physical world, have no effects on that world. This is a very odd kind of causal structure. Nature displays no other examples of such one-way causal intercourse between realms. By contrast, a physicalist **naturalism** about conscious states will **integrate[s] the mental** realm **with** the **causal unfolding of the spatiotemporal** world in an entirely familiar way. Given this, general principles of theory choice would seem to argue strongly for physicalism over epiphenomenalism.[9] If we focus on this last point, we may start wondering why the causal closure thesis is so important. If general principles of theory choice can justify physicalism, why bring in all the complications associated with causal closure? The answer is that causal closure is needed to rule out interactionist dualism. General principles of theory choice may dismiss epiphenomenalism in favour of physicalism, but they do not similarly discredit interactionist dualism. As the brief historical sketch earlier will have made clear, interactionist dualism offers a perfectly straightforward theoretical option requiring no commitment to any bizarre causal structures. Certainly the historical norm has been to regard it as the default account of the causal role of the mental realm.[10] Given this, arguments from theoretical simplicity cut no ice against interactionist dualism. Rather, the case against interactionist dualism hinges crucially on the empirical thesis that all physical effects already have physical causes. It is specifically this claim that makes it difficult to see how dualist states can make a causal difference to the physical world. It is sometimes suggested that physicalism about the mind can be vindicated by an ‘inference to the best explanation’. The thought here is that there are many well-established synchronic correlations between mental states and brain states, and that physicalism is a ‘better explanation’ of these correlations than epiphenomenalism (Hill 1991, Hill and McLaughlin 1999). From the perspective outlined here, this starts the argument in the middle rather than the beginning, by simply assuming the relevant mind-brain correlations. This assumption of pervasive synchronic mind-brain correlations is only plausible if interactionist dualism has already been ruled out. After all, if we believed interactionist dualism, then we wouldn't think dualist mental states needed any help from synchronic neural correlates to produce physical effects. And it is implausible to suppose that we have direct empirical evidence, prior to the rejection of interactive dualism, for pervasive mind-brain correlations, given the paucity of any explicit examples of well-established neural correlates for specific mental states. Rather our rationale for believing in such correlations must be that the causal closure of the physical realm eliminates interactive dualism, whence we infer that mental states can only systematically precede physical effects if they are correlated with the physical causes of those effects. G.E. Moore's famous ‘open question’ argument is designed to show that moral facts cannot possibly be identical to natural facts. Suppose the natural properties of some situation are completely specified. It will always remain an open question, argued Moore, whether that situation is morally good or bad. (Moore 1903.) Moore took this argument to show that moral facts comprise a distinct species of non-natural fact. However, any such non-naturalist view of morality faces immediate difficulties, deriving ultimately from the kind of causal closure thesis discussed above. If all physical effects are due to a limited range of natural causes, and if moral facts lie outside this range, then it follow that moral facts can never make any difference to what happens in the physical world (Harman, 1986). At first sight this may seem tolerable (perhaps moral facts indeed don't have any physical effects). But it has very awkward epistemological consequences. For beings like us, knowledge of the spatiotemporal world is mediated by physical processes involving our sense organs and cognitive systems. **If moral facts cannot influence the physical world,** then it is hard to see how we **can have** any **knowledge of them.**

### Contention [1] is Internet access.

#### Private satellites like Starlink appropriate space but can provide Internet to millions of unconnected people. The aff bans them from doing that.

Adam Estes writes in 2020 that

[Estes, Adam Clark. “The Pandemic Is Speeding up the Space Internet Race.” *Vox*, Vox, 26 Sept. 2020, www.vox.com/recode/2020/9/26/21457530/elon-musk-spacex-starlink-satellite-broadband-amazon-project-kuiper-viasat.]

In vast swaths of the United States and the world, there are millions of people who don’t have reliable internet access. These unconnected people aren’t just in far-flung places like rural America or New Zealand or sub-Saharan Africa, either. There are plenty of people living in dense city centers with limited access to affordable broadband. The [Covid-19](https://www.vox.com/coronavirus-covid19) pandemic has brought new urgency to the challenge of getting everyone connected, and while companies like Google and Facebook have floated far-out ideas for solving the problem, the internet technology that’s most promising is also one that’s already proven: satellite broadband. In early March, just days before cities across the US shut down due to the pandemic, Elon Musk [shared the latest details](https://arstechnica.com/information-technology/2020/03/musk-says-starlink-isnt-for-big-cities-wont-be-huge-threat-to-telcos/) about his plan to build a satellite broadband service called Starlink. Speaking at a satellite conference in Washington, DC, Musk described how a constellation of Starlink satellites will “blink” when they enter low-Earth orbit. As described, they almost sound like streaks of glitter in the night sky, or magic bands of flying gadgets that can beam internet down to anyone on the planet. Combined with improvements to existing technology like DSL, cable, and fiber — not to mention 4G and 5G cellular networks — futuristic satellite broadband stands to bridge the digital divide in the US and elsewhere. And because the pandemic has prompted explosive demand for better, more widely available internet connectivity, fast progress seems more inevitable than ever. Musk’s new satellites went online in early September, giving beta testers download speeds [that rival those of terrestrial broadband](https://www.theverge.com/2020/9/3/21419841/spacex-starlink-internet-satellite-constellation-download-speeds-space-lasers). SpaceX has now put 700 Starlink satellites into orbit in the past 16 months and [has plans to deliver](https://spacenews.com/spacex-submits-paperwork-for-30000-more-starlink-satellites/) as many as 30,000 more in the next few years. More satellites mean more bandwidth and faster speeds, and eventually, SpaceX says, its low-Earth orbit satellite constellations could deliver high-speed internet to the entire US. [Amazon](https://www.theverge.com/2019/4/4/18295310/amazon-project-kuiper-satellite-internet-low-earth-orbit-facebook-spacex-starlink), [Facebook](https://www.wired.com/story/facebook-confirms-its-working-on-new-internet-satellite/), and several startups have made similar promises in recent years. The concept of satellite-based internet service is actually decades old. However, the innovative low-Earth orbit satellite technology being developed by SpaceX and others could be essential, if not transformative, for everything from telemedicine to remote learning in places that aren’t already connected. [Satellite broadband](https://www.vox.com/recode/2020/9/10/21426810/internet-access-covid-19-chattanooga-municipal-broadband-fcc) could also be very profitable for whichever company figures it out first. One could imagine Amazon using satellite broadband to boost its Amazon Web Services (AWS) business, or Facebook using it to ensure that more people get on its platform. And if Musk gets his way, his Starlink constellations will generate billions of dollars in profits to fund his mission to colonize Mars. This all sounds futuristic, but satellite broadband is already a very real thing. In fact, if you’ve ever connected to wifi on a plane or cruise ship, you’ve probably used it. The basic idea is that ground stations connected to the internet, known as gateways, can send data up to a satellite which then relays that data to antennas somewhere else on the ground — or on a ship or an airplane. The problem with this technological feat is that it’s all very expensive. It can cost hundreds of millions of dollars to launch satellites into space, and that’s not even taking into account what it takes to get over regulatory hurdles. Plenty of companies have tried and failed to crack the business model in the past 20 years. But rather suddenly, the space internet game has changed. “The Covid-19 crisis has significantly accelerated attention to and investment in satellite technology,” Babak Beheshti, dean of the College of Engineering and Computing Sciences at the New York Institute of Technology, told Recode. Beheshti added that the number of launches had gone up tenfold from last year to this year. “Why? Because schools, local governments, and others suddenly needed to have broadband internet access in areas where there was really no infrastructure in place.”

#### And, cheap internet and digital technology enable economic growth in Africa and raises wages.

According to the World Bank in 2021,

[World Bank Group. “Digital Technologies Can Help Bridge the Digital Divide in Africa.” *World Bank*, World Bank Group, 28 Sept. 2021, www.worldbank.org/en/news/feature/2021/09/24/narrowing-the-digital-divide-can-foster-inclusion-and-increase-jobs.]

A growing body of evidence demonstrates that digital technologies can enable economic transformation in Africa and help create more jobs for its people.

Digital technologies do so by helping all people, and especially lower-income and lower-skilled entrepreneurs and employees, work better and learn better, catalyzing adoption and productivity of complementary technologies. World Bank country-level studies, on Nigeria, Senegal, and Tanzania, have analyzed the impact on jobs of mobile internet availability (3G or 4G coverage), including the poor and most vulnerable.

Studies show that both internet availability and use of more sophisticated digital technologies lead to more and better jobs for lower-income, lower-skilled people, and hence reduce poverty. Labor force participation and wage employment increased significantly in areas with internet availability after three years, relative to those with no coverage. For example, digital technologies such as the use of local language videos on tablet computers and use of a decision support tool app on a smartphone can provide personalized advice resulting in better jobs, and an increase in crop yields of lower-income farmers.

#### Furthermore, poor quality Internet and lack of Internet increases hurts women and girls by causing inequality. Starlink will make things better.

Gromova and others find in 2021 that

[“Opening a Global Conversation about the Gender Digital Divide.” *World Bank Blogs*, blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide.]

[The COVID-19 pandemic showed how critical digital technologies are in today’s world — they kept businesses, education, government services, healthcare, and economies running despite the health crisis and global economic downturn.](https://twitter.com/intent/tweet?text=The+COVID-19+pandemic+showed+how+critical+digital+technologies+are+in+today%E2%80%99s+world+%E2%80%94+they+kept+businesses%2C+education%2C+government+services%2C+healthcare%2C+and+economies+running+despite+the+health+crisis+and+global+economic+downturn.&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev)

But it also shed light on another issue — many people and communities have been left out of their country’s digital transformation. Why is this a problem? Because economic development has become more dependent on digital technologies. Those with limited or no access to technology are falling further and further behind.

In many developing countries, women and girls fall into this category. Barriers and constraints in accessing the internet impede their full participation in the social and economic life of their communities and countries. [Today, we are seeing long-standing development gaps between men and women moving online. It is called the gender digital divide.](https://twitter.com/intent/tweet?text=Today%2C+we+are+seeing+long-standing+development+gaps+between+men+and+women+moving+online.+It+is+called+the+gender+digital+divide.%20&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev)

Digital transformation can’t achieve its potential when half of the world’s population is excluded or limited from the process, making it an important and relevant topic in development. [Closing this divide is imperative for ensuring women and girls have better and more access to healthcare, education, jobs, and civic participation.](https://twitter.com/intent/tweet?text=Closing+this+divide+is+imperative+for+ensuring+women+and+girls+have+better+and+more+access+to+healthcare%2C+education%2C+jobs%2C+and+civic+participation.&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev)

However, [bridging the gender digital divide is complex — its causes are multifactorial, and the mix of factors changes across a woman’s lifetime.](https://twitter.com/intent/tweet?text=bridging+the+gender+digital+divide+is+complex+%E2%80%94+its+causes+are+multifactorial%2C+and+the+mix+of+factors+changes+across+a+woman%E2%80%99s+lifetime.&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev) These include the legal and regulatory environment, the availability and accessibility of affordable internet, digital skills development, relevant content, online safety and security, and opportunities for education and employment in the ICT sector.

Cutting across all these factors are social and cultural norms and expectations concerning girls’ and women’s roles and their relationship to technology. For instance, cost concerns may limit the number and sophistication of smartphones used in a household. When the supply of phones or computers is limited, women’s and girls’ access is not prioritized. [Affordability concerns can also impact internet availability for girls and women; lower-cost internet access plans are usually more restrictive in terms of service and are of lower quality.](https://twitter.com/intent/tweet?text=Affordability+concerns+can+also+impact+internet+availability+for+girls+and+women%3B+lower-cost+internet+access+plans+are+usually+more+restrictive+in+terms+of+service+and+are+of+lower+quality.+&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev)The poor user experience may decrease women’s interest—or appetite — in using the internet or seeing it as a valuable resource.

Security and privacy concerns also creep in, like online harassment and cyberstalking. These threats further discourage women from becoming active internet users. [The ability to use digital technologies productively and safely requires digital literacy, skills, and confidence that may not be provided or encouraged for women and girls.](https://twitter.com/intent/tweet?text=The+ability+to+use+digital+technologies+productively+and+safely+requires+digital+literacy%2C+skills%2C+and+confidence+that+may+not+be+provided+or+encouraged+for+women+and+girls.&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev) Pursuing STEM education may be actively discouraged, narrowing the pipeline of potential female leaders, role models in technology fields, and gender-based innovation.

[To find a definitive solution for addressing the gender digital divide, we need a comprehensive, systematic approach to define, measure, analyze and understand it.](https://twitter.com/intent/tweet?text=To+find+a+definitive+solution+for+addressing+the+gender+digital+divide%2C+we+need+a+comprehensive%2C+systematic+approach+to+define%2C+measure%2C+analyze+and+understand+it.&url=https://blogs.worldbank.org/digital-development/opening-global-conversation-about-gender-digital-divide/?cid=SHR_BlogSiteTweetable_EN_EXT&via=WBG_DigitalDev) We need a system for systematically collecting data to establish a baseline and measure progress. We also need to educate decision-makers in government, businesses, and academia about the burdens the gender digital divide brings. Finally, we need to design and implement effective measures to address it.

This topic is close to our hearts. We feel that greater awareness and a global conversation is an essential step for tackling these issues. For that reason, we are launching a series of blogs that explore the challenges and opportunities faced in bridging the gender digital divide.

In our upcoming publications, we will try to answer the following questions:

•    Can best practices for digital inclusion be identified across countries?   
•    Can these practices be implemented in other countries?   
•    How does digital inclusion affect outcomes for girls and women?

We look forward to sharing more research and ideas on how to close the global digital divide, and how to help make sure that everybody can take full advantage of the ongoing digital development revolution.

### Contention 2 is innovation

#### Link Story

#### First, the US commercial space industry is booming – private space companies are driving innovation

**Lindzon** 2021 [(Jared Lindzon, A FREELANCE JOURNALIST AND PUBLIC SPEAKER BORN, RAISED AND BASED IN TORONTO, CANADA. LINDZON'S WRITING FOCUSES ON THE FUTURE OF WORK AND TALENT AS IT RELATES TO TECHNOLOGICAL INNOVATION) "How Jeff Bezos and Elon Musk are ushering in a new era of space startups," Fast Company, 2/23/21, https://www.fastcompany.com/90606811/jeff-bezos-blue-origin-elon-musk-spaces-space]

In early February, Jeff Bezos, the founder of Amazon and one of the planet’s wealthiest entrepreneurs, dropped the bombshell announcement that he would be stepping down as CEO to free up more time for his other passions. Though Bezos listed a few targets for his creativity and energy—The Washington Post and philanthropy through the Bezos Earth Fund and Bezos Day One Fund—one of the highest-potential areas is his renewed commitment and focus on his suborbital spaceflight project, Blue Origin. Before space became a frontier for innovation and development for privately held companies, opportunities were limited to nation states and the private defense contractors who supported them. In recent years, however, billionaires such as Bezos, Elon Musk, and Richard Branson have lowered the barrier to entry. Since the launch of its first rocket, Falcon 1, in September of 2008, Musk’s commercial space transportation company SpaceX has gradually but significantly reduced the cost and complexity of innovation beyond the Earth’s atmosphere. With Bezos’s announcement, many in the space sector are excited by the prospect of those barriers being lowered even further, creating a new wave of innovation in its wake. “What I want to achieve with Blue Origin is to build the heavy-lifting infrastructure that allows for the kind of dynamic, entrepreneurial explosion of thousands of companies in space that I have witnessed over the last 21 years on the internet,” Bezos said during the Vanity Fair New Establishment Summit in 2016. During the event, Bezos explained how the creation of Amazon was only possible thanks to the billions of dollars spent on critical infrastructure—such as the postal service, electronic payment systems, and the internet itself—in the decades prior. “On the internet today, two kids in their dorm room can reinvent an industry, because the heavy-lifting infrastructure is in place for that,” he continued. “Two kids in their dorm room can’t do anything interesting in space. . . . I’m using my Amazon winnings to do a new piece of heavy-lifting infrastructure, which is low-cost access to space.” In the less than 20 years since the launch of SpaceX’s first rocket, space has gone from a domain reserved for nation states and the world’s wealthiest individuals to everyday innovators and entrepreneurs. Today, building a space startup isn’t rocket science. THE NEXT FRONTIER FOR ENTREPRENEURSHIP According to the latest Space Investment Quarterly report published by Space Capital, the fourth quarter of 2020 saw a record $5.7 billion invested into 80 space-related companies, bringing the year’s total capital investments in space innovation to more than $25 billion. Overall, more than $177 billion of equity investments have been made in 1,343 individual companies in the space economy over the past 10 years. “It’s kind of crazy how quickly things have picked up; 10 years ago when SpaceX launched their first customer they removed the barriers to entry, and we’ve seen all this innovation and capital flood in,” says Chad Anderson, the managing partner of Space Capital. “We’re on an exponential curve here. Every week that goes by we’re picking up the pace.”

**And, Crushing these inspirations now will delay next-gen space applications by decades**

**Hampson 17** Joshua Hampson, Security Studies Fellow at The Niskanen Center, Niskanen Center, January 25, 2017, “The Future of Space Commercialization”, https://niskanencenter.org/wp-content/uploads/2017/01/TheFutureofSpaceCommercializationFinal.pdf

How Government Allows Space Business

Finally, the United States also needs to look at how it allows space business to be conducted. Organizational changes may allow the government to be better positioned to consider policies and regulation, and government business reforms may ensure that markets are not skewed too much. Responsible policies, however, will be the most important aspect of a healthy commercial space market. The United States benefits from promoting as large a space economy as possible. Such an economy would drive innovation and promote growth. For the government, a freestanding space economy would drive down costs of launches and services. How then should the government approach its space regulations? While the commercial space market is perhaps in a better shape than it ever has been, it still is relatively fragile. While this paper has mentioned the various pressures that are 208 growing on the U.S. government to review its space regulation, those pressures themselves do not mean that the United States should regulate for regulation’s sake. For example, in some cases the solution may simply be clarifying the decision process and enabling a review process. In approaching commercial space, government agencies should take as light-touch an approach as possible. Missions should be default-approved, with the burden of proof on the government to demonstrate that a particular mission would be risky to the public or national security. If within a standard period of time the government cannot articulate a specific reason as to why the mission should not move forward, it should be permitted. The application process for missions should be clearly articulated, and decisions should be consistent across applications from different companies. Informal processes should be formalized. Decisions made for national security reasons should at least be traceable, in case review is necessary. There should also be a public review process for challenging decisions. The remote sensing industry is an example of what can happen when overly burdensome regulations are put into place: American businesses are handicapped and industry advantage shifts to foreign competitors. In this regard, current policies that are archaic should also be revisited. The licensing process for remote sensing, for example, has been criticized as arbitrary. The result, at least from the commercial viewpoint, has 209 been that non-governmental remote sensing is provided mostly by non-American companies. The 210 review of the export control system should also continue, with regular updates. The specificity of 211 the restrictions means that they can become obsolete quickly, with non-American companies producing equipment American companies are constrained from selling abroad. In reviewing these processes and systems, the goal should be that the space market becomes self-supporting rather than a simple privatization of government tasks.212 The government can also avoid creating regulations to manage issues that could be managed under existing law. It is possible, for example, that tort law could be used to manage some of the possible issues of outer space, at least in issues between two American companies. Outer space is not a single policy area which requires a one-size-fits-all approach. There are a range of issues with a range of analogs in existing domestic and international law, and there will be a range of potential solutions to those particular issues. Space mining may be analogous to deep sea exploration, while debris clean-up in orbit would require international agreements and coordination. Maturity levels of different parts of the industry will also inform different approaches. Regulations, if found to be necessary, should be consistent, unambiguous, and specific. The process for rulings on decisions should be transparent and consistently applied. The government should avoid using catch-all categories and should instead specifically draft the rules for individual activities in space if needed. The government should also remember that the OST is not self-executing. Although there could be international consequences for decisions made about whether to regulate an activity in space or not, the United States has leeway in determining what needs authorization and how intensive “continuing supervision” needs to be. The United States also should not try to guess what 213 commercial uses of outer space may become viable or not. It is important to remember the lesson of AT&T’s 1960 license application: the commercial sector may surprise the government in what the latter believes to be viable.214 Because of Article VI mandate in the OST and the complexity of the issues at play, avoiding burdensome regulation is the hardest policy suggestion. The mere presence of complexity, however, does not mean that the government should err on the side of overly restrictive policies, especially when the benefits to liberalizing the regulations in this industry are so pronounced. Conclusion This recommended list of actions does not exhaust the possibilities for how the U.S. government can promote commercial outer space. New and complex problems will certainly arise in the future. For now, these proposals can help the United States realize the full potential of outer space for private actors and the government alike. Elevating space policy to a higher level within the government, codifying an attitude of openness to innovation, and making sure that any regulations—if needed—are up-to-date, clear, and reliably applied are key to realizing the benefits of space. A growing and robust commercial space economy will facilitate economic growth and promote domestic national security. The same incentives that drive innovation in the competitive, commercial sector will, over time, reduce the costs and increase the capabilities of American security space systems. Innovations in satellite technology will change how parts of the economy operate, and how the U.S. military projects power abroad. Cheap launch services can open Earth’s orbit and beyond to larger markets, eager entrepreneurs, and new inventors. Those services could also allow the United States to create a more resilient defense network in orbit and, if necessary, quickly reconstitute it. There are many challenges that stand in the way of that market—from the sheer difficulty of going to space to the geopolitical and legal complexities involved—but now is the time to get serious about crafting good space policy. The decisions in the next couple of years could define access to space, and the benefits we reap, for generations to come. The United States must decide between a risk-averse approach—restraining the market and ceding exploration and investment to more adventurous nations—and an optimistic and permissive approach, with intervention only when it is clearly necessary. The rise of a commercial space market will not necessarily be uneventful. There will be failures, and some of the optimistic companies that exist today will succumb to competitors or the difficulty of the task at hand. Investments in space will ebb and flow. But there will be no groundbreaking 215 innovation if we refuse to tolerate failures and allow the market to mature. Public safety, especially for launches, must remain a concern, but that does not have to come at the expense of promoting growth and defending national security. The United States is on the cusp of having an independent commercial space market. With a few smart decisions and a policy of regulatory restraint, the government can simultaneously promote innovation, growth, and national security, while proving that enterprise in space does not require the backing of a large nation state. That would be a giant leap for mankind.

#### B. Impact Story

**Space Innovations are essential to stop multiple extinction level issues**

**Beames 18** – Chairman of the SmallSat Alliance & Exec Chairman of York Space Systems, former Principal Director of Space & Intel-Office of UnderSecDef AT&L

Charles Beames, Chairman of the SmallSat Alliance, Executive Chairman of York Space Systems, former Principal Director of Space and Intelligence in the Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L)), active early stage investor in entrepreneurial space, former President of Vulcan Aerospace where he was responsible for asset allocation within a privately held aerospace investment portfolio exceeding $1B, Col. (ret.) in the USAF where he served 23 years in space & intelligence leadership positions around the world, SmallSat Alliance is on a path toward a new space horizon, first appeared in the July 2018 issue of SpaceNews Magazine, available at <https://spacenews.com/op-ed-smallsat-alliance-is-on-a-path-toward-a-new-space-horizon/>

We find ourselves still at the dawn of a new space century, mindful of the victories and setbacks of our past, eager to pass the torch to the next generation of space visionaries, scientists, engineers, and enthusiasts. We look to the future not just to see how much bigger, faster, or higher we can reach, but also how the United States, and specifically the U.S. space community, can again inspire the nations of the world to align with us, as it did in the 20th century.

The SmallSat Alliance is an alliance of companies developing, producing, and operating in all segments of the ‘next generation’ space economy; championing renewed U.S. leadership in the burgeoning commercial space economy, and advocating for the transformation of government-led space capabilities. We are experienced space professionals who have chosen to join with others leveraging our decades of hard-won experience, to develop smarter ways to explore space in the 21st century.

A wonderful outgrowth of the legacy space program is the commercial, entrepreneurial, and job-creating commercial space business that it bequeathed. These next-generation enterprises range from multi-million-dollar startups providing rideshare opportunities or components for small satellites to multi-billion-dollar space data-analytic platforms reinventing urban car service and agricultural production. The early returns of this economic revolution are already on our doorstep: space data capabilities are exponentially growing elements of the 21st century world economy.

Beginning with the dreams and funding by successful tech entrepreneurs, enormous venture investments are already delivering wondrous benefits to the world.

Commercial Space – Profit and Non-Profit

There are really two major categories in the commercial sector, the profit driven and the non-profit. The classic for-profit companies include not only those designing, building, launching, and operating satellites but also the tech sector that is turning that raw space data into gold through machine-learning analytics. Since for-profit companies are no longer dependent upon the revenues generated by the Cold War space race culture of a bygone era, this new generation of space companies is able to more efficiently capitalize on Moore’s Law, the nonstop exponential growth in chip density, and the associated networking technology co-evolving with it. This new generation is building profitable businesses helping to clean up our oceans of garbage and debris with satellite surveillance, reconnoitering to assist in enforcing laws that protect our oceans from illegal, unregulated, unlicensed fishing, something that is rapidly depleting the world’s most valuable and essential lifeforms. It’s leading in the innovative use of low-cost satellite constellations to produce ubiquitous remote-sensing data, enabling small business owners to be more profitable and less wasteful. For example, precise timing signals from space are already optimizing transportation of people, goods, and services, with even further gains anticipated with the introduction of artificial intelligence to assist drivers, perhaps even someday replacing them entirely.

The non-profit sector is the other side of commercial space, concerned more for the general welfare of society, but every bit as integral to this new space enterprise. Much like every century before it in human history, ours is not without its unique challenges, some of which have been a consequence of the last, and all of which the space data domain can be leveraged to help solve. Examples are endless, but one challenge that this new space community is uniquely well-adapted for is to further inform worldwide resource allocation for the 21st century and beyond. These two primary resources are sustainable water and the materials needed for adequate housing for an ever-increasing human population. As cities and urbanization continue to expand, governmental planning challenges such as transportation design optimization for goods and services are only the beginning. Additionally, through using inexpensive remote sensing technologies, some members are designing space data analytics to mitigate human suffering from plagues, contain outbreaks, and combating illegal poaching. Some are connecting with other non-profits to curtail human trafficking for the sex trade or forced labor for migrant debt repayment. Still others are helping non-governmental organizations in their work to expose the use of **child**ren as **soldiers**. Addressing these challenges has little to do with resuscitating dreams conceived by long deceased science-fiction writers and much more to do with **turning “swords back into plowshares**” to **solve real threats to humanity**.

Other non-profit initiatives include pursuing an even more foundational understanding of who we are and how to be the best custodians of our environment. Much as exploring and monitoring the world’s oceans has advanced civilization through a better understanding of human life and the planet, so too does exploring and monitoring from space. Low Earth orbit (LEO) provides a unique vantage point to look back on the planet and understand what is happening, anticipate what might happen and prepare for the future. In addition to better understanding Earth, responsible and rapid exploitation of the low Earth orbit domain will enhance the understanding of the solar system and the rest of the universe. Small satellites already offer low-cost platforms to study and explore what lies beyond the Earth. Other members are pioneering the use of zero-carbon, hydrogen-based reusable propulsion systems to ensure we don’t worsen our atmosphere using kerosene-fueled rockets for the coming tsunami of satellite launches. Finally, a mission ensuring the general welfare and planet survival for the next thousand years is finally confronting the existential threat that asteroids and comets pose to humanity. These extra-terrestrial, deep-space threats are passing dangerously close to our planet, and today we have no solar map of them and no defense.