## 1

#### Xi is tightening control over the PLA but completing goals are critical.

Krishnan 21 – Ananth, 11/18/21, [‘Xi tightened control over the PLA’, TheHindu, <https://www.thehindu.com/news/international/xi-tightened-control-over-the-pla/article37549460.ece>] Justin

The new resolution on history passed last week by China’s ruling Communist Party has said that President Xi Jinping had tightened control over the military to address the party’s “obviously lacking” leadership of the armed forces under his predecessors.

The full text of the resolution, released on Tuesday evening, listed some of the actions taken by the People’s Liberation Army (PLA) under Mr. Xi, who is also the chairman of the Central Military Commission. These included what the document described as “major operations related to border defence”.

No specifics

It did not specify what those major operations were. China has unresolved land borders with India and Bhutan. In April 2020, the PLA mobilised two divisions and carried out multiple transgressions across the Line of Actual Control (LAC) in Eastern Ladakh, sparking the worst crisis along the border in many years. Talks to resolve the tensions are still on-going.

“The armed forces have remained committed to carrying out military struggles in a flexible manner to counter military provocations by external forces, and they have created a strong deterrent against separatist activities seeking ‘Taiwan independence,’” the resolution said.

“They have conducted major operations related to border defence, protecting China’s maritime rights, countering terrorism and maintaining stability, disaster rescue and relief, fighting COVID-19, peacekeeping and escort services, humanitarian assistance, and international military cooperation.”

Last week’s resolution on history was only third such document putting forth the official view on party history, following resolutions passed by Mao Zedong in 1945 and Deng Xiaoping in 1981.

The new resolution dealt more with the future than the past. It essentially reaffirmed the official view on history, saying that the “basic points and conclusions” of past resolutions “remain valid to this day.”

It repeated the conclusion reached in 1981 on Mao’s errors noting that “mistakes were made” and that “Mao Zedong’s theoretical and practical errors concerning class struggle in a socialist society became increasingly serious” leading to the disasters of the Cultural Revolution.

Criticism of predecessors

Much of the new resolution focuses on emphasising Mr. Xi’s leadership and calling for the party to support his “core” status. It only briefly mentioned Mr. Xi’s predecessors Jiang Zemin and Hu Jintao, and implicitly critcised some aspects of their leadership including on military matters.

“For a period of time, the party’s leadership over the military was obviously lacking,” it noted. “If this problem had not been completely solved, it would not only have diminished the military’s combat capacity, but also undermined the key political principle that the party commands the gun.”

The document said Mr. Xi’s leadership had tightened supervision on the military including boosting “troop training and battle preparedness”, and it repeated China’s stated goals of completing the modernisation of its armed forces by 2035 and building a “world class” military by 2050, which observers see as meaning on par with the U.S.

‘Working vigorously’

“To build strong people’s armed forces, it is of paramount importance to uphold the fundamental principle and system of absolute party leadership over the military, to ensure that supreme leadership and command authority rest with the party Central Committee and the Central Military Commission (CMC), and to fully enforce the system of the CMC chairman assuming overall responsibility,” the resolution said, adding that “setting their sights on this problem, the Central Committee and the CMC have worked vigorously to govern the military with strict discipline in every respect.”

#### The commercial space sector is one of the PLAs central goals – the plan is a 180.

Bartholomew & Cleveland 19 – Carolyn and Robin, 4/25/19, Chairmen and Vice Chairmen. Section is written from Michael A. McDevitt, US Congressperson, [“HEARING ON CHINA IN SPACE: A STRATEGIC COMPETITION?,” <https://www.uscc.gov/sites/default/files/transcripts/April%2025%2C%202019%20Hearing%20Transcript%20%282%29.pdf>] Justin

As the Chairman said, China is determined to become a leading space power, which requires continuing to boost its innovation capabilities, both in its civilian and military sectors. The People’s Liberation Army is closely involved in most if not every aspect of China’s space program, from helping formulate and execute national space goals to overseeing China’s human spaceflight program. Coverage of China’s space program must treat seriously the implications of the reality that in many cases the boundaries between the military and civil silos of China’s program are thin, if they exist at all.

Our second panel today will address the application of what China calls its “military-civil fusion” strategy to its space sector. Military-civil fusion, a strategic concept designed to harness civilian sector innovation to power China’s military and technological modernization with the goal of leapfrogging the United States and becoming a technological powerhouse. Space has been designated as an especially important sector for military-civil fusion, and the impacts of this campaign on China’s burgeoning commercial space sector—itself a recipient of generous government support and protection—will be crucial as Chinese companies increasingly seek to compete in the international marketplace. Military-civil fusion is especially worthy of attention due to its continued reliance on technology transfer, by hook or by crook, to fuel China’s industrial and military growth.

Our third and final panel today will examine China’s military space and counterspace activities. Since its direct-ascent kinetic antisatellite test in 2007, which was responsible for a large amount of all space debris currently in Earth’s orbit, China has continued to invest in a variety of offensive antisatellite capabilities. Indeed, China’s counterspace arsenal contains many options: earlier this month, Acting Secretary of Defense Patrick Shanahan said China “has exercised and continues to develop” jamming capabilities; is deploying directed-energy counterspace weapons; has deployed an operational ground-based antisatellite missile system; and is prepared to use cyberattacks against U.S. space systems.

#### That triggers backlash – they don’t support restrictions on the space sector and will do everything to convince leaders not to do the plan.

Cheng 14 [Dean Cheng, Senior Research Fellow in the Asia Studies Center at the Heritage Foundation, Former Senior Analyst at the China Studies Division of the Center for Naval Analyses, Former Senior Analyst with Science Applications International Corporation, “Prospects for U.S.-China Space Cooperation”, Testimony before the Committee on Commerce, Science, and Transportation, United States Senate, 4/9/2014, https://www.heritage.org/testimony/prospects-us-china-space-cooperation]

At the same time, space is now a sector that enjoys significant political support within the Chinese political system. Based on their writings, the PLA is clearly intent upon developing the ability to establish “space dominance,” in order to fight and win “local wars under informationized conditions.”[8] The two SOEs are seen as key parts of the larger military-industrial complex, providing the opportunities to expose a large workforce to such areas as systems engineering and systems integration. It is no accident that China’s commercial airliner development effort tapped the top leadership of China’s aerospace corporations for managerial and design talent.[9] From a bureaucratic perspective, this is a powerful lobby, intent on preserving its interests. China’s space efforts should therefore be seen as political, as much as military or economic, statements, directed at both domestic and foreign audiences. Insofar as the PRC has scored major achievements in space, these reflect positively on both China’s growing power and respect (internationally) and the CCP’s legitimacy (internally). Efforts at inducing Chinese cooperation in space, then, are likely to be viewed in terms of whether they promote one or both objectives. As China has progressed to the point of being the world’s second-largest economy (in gross domestic product terms), it becomes less clear as to why China would necessarily want to cooperate with other countries on anything other than its own terms. Prospects for Cooperation Within this context, then, the prospects for meaningful cooperation with the PRC in the area of space would seem to be extremely limited. China’s past experience of major high-technology cooperative ventures (Sino–Soviet cooperation in the 1950s, U.S.–China cooperation in the 1980s until Tiananmen, and Sino–European space cooperation on the Galileo satellite program) is an unhappy one, at best. The failure of the joint Russian–Chinese Phobos–Grunt mission is likely seen in Beijing as further evidence that a “go-it-alone” approach is preferable. Nor is it clear that, bureaucratically, there is significant interest from key players such as the PLA or the military industrial complex in expanding cooperation.[10] Moreover, as long as China’s economy continues to expand, and the top political leadership values space efforts, there is little prospect of a reduction in space expenditures—making international cooperation far less urgent for the PRC than most other spacefaring states. [FOOTNOTE] [10]It is worth noting here that the Chinese Ministry of Foreign Affairs is not a part of the CCP Politburo, a key power center in China. Thus, the voice of the Ministry of Foreign Affairs is muted, at best, in any internal debate on policy. [END FOOTNOTE] If there is likely to be limited enthusiasm for cooperation in Chinese circles, there should also be skepticism in American ones. China’s space program is arguably one of the most opaque in the world. Even such basic data as China’s annual space expenditures is lacking—with little prospect of Beijing being forthcoming. As important, China’s decision-making processes are little understood, especially in the context of space. Seven years after the Chinese anti-satellite (ASAT) test, exactly which organizations were party to that decision, and why it was undertaken, remains unclear. Consequently, any effort at cooperation would raise questions about the identity of the partners and ultimate beneficiaries—with a real likelihood that the PLA would be one of them.

#### An unhinged PLA triggers Himalayan war – goes global

Chellaney 17 [Dr. Brahma Chellaney, Professor of Strategic Studies at the Center for Policy Research and Fellow at the Robert Bosch Academy, PhD in International Studies from Jawaharlal Nehru University, “Why the Chinese Military’s Rising Clout Troubles Xi Jinping”, The National, 9/9/2017, https://www.thenational.ae/opinion/why-the-chinese-military-s-rising-clout-troubles-xi-jinping-1.626815?videoId=5754807360001]

China’s president Xi Jinping has stepped up his domestic political moves in the run-up to the critical 19th national congress of the Chinese Communist Party next month, but he is still struggling to keep the People’s Liberation Army (PLA) in line. China’s political system makes it hard to get a clear picture, yet Mr Xi’s actions underscore the troublesome civil-military relations in the country. Take the recent standoff with India that raised the spectre of a Himalayan war, with China threatening reprisals if New Delhi did not unconditionally withdraw its forces from a small Bhutanese plateau, which Beijing claims is Chinese territory. After 10 weeks, the face-off on the Doklam Plateau ended with both sides pulling back troops and equipment from the site on the same day, signalling that Beijing, not New Delhi, had blinked. The mutual-withdrawal deal was struck just after Mr Xi replaced the chief of the PLA’s joint staff department. This key position, equivalent to the chairman of the US joint chiefs of staff, was created only last year as part of Mr Xi’s military reforms to turn the PLA into a force “able to fight and win wars”. The Doklam pullback suggests that the removed chief, Gen Fang Fenghui, who has since been detained for alleged corruption, was an obstacle to clinching a deal with India. To be sure, this was not the first time that the PLA’s belligerent actions in the Himalayas imposed diplomatic costs on China. A classic case happened when Mr Xi reached India on a state visit in September 2014. He arrived on Indian prime minister Narendra Modi’s birthday with a strange gift for his host, a predawn Chinese military encroachment deep into India’s northern region of Ladakh. The encroachment, the worst in many years in terms of the number of intruding troops, overshadowed Mr Xi’s visit. It appeared bizarre that the military of an important power would seek to mar the visit of its own head of state to a key neighbouring country. Yet Chinese premier Li Keqiang’s earlier visit to New Delhi in 2013 was similarly preceded by a PLA incursion into another part of Ladakh that lasted three weeks. Such provocations might suggest that they are intentional, with the Chinese government in the know, thus reflecting a preference for blending soft and hard tactics. But it is also possible that these actions underscore the continuing “disconnect between the military and the civilian leadership” in China that then US defence secretary Robert Gates warned about in 2011. During his 2014 India trip, Mr Xi appeared embarrassed by the accompanying PLA encroachment and assured Mr Modi that he would sort it out upon his return. Soon after he returned, the Chinese defence ministry quoted Mr Xi as telling a closed-door meeting with PLA commanders that “all PLA forces should follow the president’s instructions” and that the military must display “absolute loyalty and firm faith in the party”. Recently Xi conveyed that same message yet again when he addressed a parade marking the 90th anniversary of the PLA’s creation on August 1, 1927. Donning military fatigues, Mr Xi exhorted members of his 2.3-million-strong armed forces to “unswervingly follow the absolute leadership of the party.” Had civilian control of the PLA been working well, would Mr Xi repeatedly be demanding “absolute loyalty” from the military or asking it to “follow his instructions”? China does not have a national army; rather the party has an army. So the PLA has traditionally sworn fealty to the party, not the nation. Under Mr Xi’s two immediate predecessors, Hu Jintao and Jiang Zemin, the PLA gradually became stronger at the expense of the party. The military’s rising clout has troubled Mr Xi because it hampers his larger ambition. As part of his effort to reassert party control over the military, Mr Xi has used his anti-corruption campaign to ensnare a number of top PLA officers. He has also cut the size of the ground force and established a new command-and-control structure. But just as a dog’s tail cannot be straightened, asserting full civil control over a politically ascendant PLA is proving unachievable. After all, the party depends on the PLA to ensure domestic order and sustain its own political monopoly. The regime’s legitimacy increasingly relies on an appeal to nationalism. But the PLA, with its soaring budgets and expanding role to safeguard China’s overseas interests, sees itself as the ultimate arbiter of nationalism. To make matters worse, Mr Xi has made many enemies at home in his effort to concentrate power in himself, including through corruption purges. It is not known whether the PLA’s upper echelon respects him to the extent to be fully guided by his instructions. In the past decade, the PLA’s increasing clout has led China to stake out a more muscular role. This includes resurrecting territorial and maritime disputes, asserting new sovereignty claims, and using construction activity to change the status quo. China’s cut-throat internal politics and troubled civil-military relations clearly have a bearing on its external policy. The risks of China’s rise as a praetorian state are real and carry major implications for international security.

#### Extinction.

Caldicott 17 – Helen, 2017, Founder of Physicians for Social Responsibility [“The new nuclear danger: George W. Bush's military-industrial complex,” The New Press]//Elmer

The use of Pakistani nuclear weapons could trigger a chain reac­tion. **Nuclear-armed India, an ancient enemy, could respond** in kind. China, India's hated foe, could react if India used her nuclear weapons, triggering a nuclear [war] ~~holocaust~~ on the subcontinent. If any of either **Russia** or **America**'s 2,250 strategic weapons on hair-trigger alert were launched either **accidentally** or **purposefully** in response, **nuclear winter** would ensue, meaning the **end of most life on earth**.

## 2

#### Ethics must begin a priori and the meta-ethic is bindingness.

#### [1] Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### [2] Bindingness – I can keep asking “why should I follow this” which results in skep since obligations are predicated on ignorantly accepting rules. Only reason solves since asking “why reason?” requires reason which is self-justified.

#### That means we must universally will maxims— any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with the categorical imperative.

#### Prefer –

#### [1] All other frameworks collapse—non-Kantian theories source obligations in extrinsically good objects, but that presupposes the goodness of the rational will.

#### [2] Theory – Frameworks are topicality interps of the word ought so they should be theoretically justified. Prefer on resource disparities—a focus on evidence and statistics privileges debaters with the most preround prep which excludes lone-wolfs who lack huge evidence files. A debate under my framework can easily be won without any prep since huge evidence files aren’t required.

#### [3] No 1AR Framework: It moots 7 minutes of the 1NC and exacerbates the AFF infinite prep time so I should be able to compensate by choosing. They justify substantive skews by shifting frame of offense.

Consequences Fail: a] Every action has infinite stemming consequences, because every consequence can cause another consequence so we can’t predict. b] Induction is circular because it relies on the assumption that nature will hold uniform and we could only reach that conclusion through inductive reasoning based on observation of past events. c] action theory – Every action is infinitely divisible, only intents unify because we commit the end point of an action – but consequences cannot determine what step of action is moral d] Yes act/omission distinction – there are infinite events occurring over which you have no control, so you can never be moral

#### Negate:

#### [1] A model of freedom mandates a market-oriented approach to space—that negates

Broker 20 [(Tyler, work has been published in the Gonzaga Law Review, the Albany Law Review and the University of Memphis Law Review.) “Space Law Can Only Be Libertarian Minded,” Above the Law, 1-14-20, <https://abovethelaw.com/2020/01/space-law-can-only-be-libertarian-minded/>] TDI

The impact on human daily life from a transition to the virtually unlimited resource reality of space cannot be overstated. However, when it comes to the law, a minimalist, dare I say libertarian, approach appears as the only applicable system. In the words of NASA, “2020 promises to be a big year for space exploration.” Yet, as Rand Simberg points out in Reason magazine, it is actually private American investment that is currently moving space exploration to “a pace unseen since the 1960s.” According to Simberg, due to this increase in private investment “We are now on the verge of getting affordable private access to orbit for large masses of payload and people.” The impact of that type of affordable travel into space might sound sensational to some, but in reality the benefits that space can offer are far greater than any benefit currently attributed to any major policy proposal being discussed at the national level. The sheer amount of resources available within our current reach/capabilities simply speaks for itself. However, although those new realities will, as Simberg says, “bring to the fore a lot of ideological issues that up to now were just theoretical,” I believe it will also eliminate many economic and legal distinctions we currently utilize today. For example, the sheer number of resources we can already obtain in space means that in the rapidly near future, the distinction between a nonpublic good or a public good will be rendered meaningless. In other words, because the resources available within our solar system exist in such quantities, all goods will become nonrivalrous in their consumption and nonexcludable in their distribution. This would mean government engagement in the public provision of a nonpublic good, even at the trivial level, or what Kevin Williamson defines as socialism, is rendered meaningless or impossible. In fact, in space, I fail to see how any government could even try to legally compel collectivism in the way Simberg fears. Similar to many economic distinctions, however, it appears that many laws, both the good and the bad, will also be rendered meaningless as soon as we begin to utilize the resources within our solar system. For example, if every human being is given access to the resources that allows them to replicate anything anyone else has, or replace anything “taken” from them instantly, what would be the point of theft laws? If you had virtually infinite space in which you can build what we would now call luxurious livable quarters, all without exploiting human labor or fragile Earth ecosystems when you do it, what sense would most property, employment, or commercial law make? Again, this is not a pipe dream, no matter how much our population grows for the next several millennia, the amount of resources within our solar system can sustain such an existence for every human being. Rather than panicking about the future, we should try embracing it, or at least meaningfully preparing for it. Currently, the Outer Space Treaty, or as some call it “the Magna Carta of Space,” is silent on the issue of whether private individuals or corporate entities can own territory in space. Regardless of whether governments allow it, however, private citizens are currently obtaining the ability to travel there, and if human history is any indicator, private homesteading will follow, flag or no flag. We Americans know this is how a Wild West starts, where most regulation becomes the impractical pipe dream. But again, this would be a Wild West where the exploitation of human labor and fragile Earth ecosystem makes no economic sense, where every single human can be granted access to resources that even the wealthiest among us now would envy, and where innovation and imagination become the only things we would recognize as currency. Only a libertarian-type system, that guarantees basic individual rights to life, liberty, and the pursuit of happiness could be valued and therefore human fidelity to a set of laws made possible, in such an existence.

#### [2] Banning private space appropriation inhibits the sale and use of spacecraft and fuel- that’s a form of restricting the free economic choices of individuals

**Richman 12**, Sheldon. “The free market doesn’t need government regulation.” Reason, August 5, 2012. // AHS RG

Order grows from market forces. But where do **market forces** come from? They **are the result of human action. Individuals select ends and act to achieve them by adopting suitable means.** Since means are scarce and ends are abundant, **individuals economize in order to accomplish more rather than less.** And they always seek to exchange lower values for higher values (as they see them) and never the other way around. In a world of scarcity, tradeoffs are unavoidable, so one aims to trade up rather than down. (One’s trading partner does the same.) **The result of this**, along with other **features of human action**, and the world at large **is what we call market forces. But really, it is just men and women acting rationally in the world.**

#### [3] Acquisition of property can never be unjust – to create rights violations, there must already be an owner of the property being violated, but that presupposes its appropriation by another entity.

Feser 1, (Edward Feser, 1-1-2005, accessed on 12-15-2021, Cambridge University Press, "THERE IS NO SUCH THING AS AN UNJUST INITIAL ACQUISITION | Social Philosophy and Policy | Cambridge Core", Edward C. Feser is an American philosopher. He is an Associate Professor of Philosophy at Pasadena City College in Pasadena, California. [https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)[brackets](https://www.cambridge.org/core/journals/social-philosophy-and-policy/article/abs/there-is-no-such-thing-as-an-unjust-initial-acquisition/5C744D6D5C525E711EC75F75BF7109D1)%5bbrackets) for gen lang]//phs st

There is a serious difficulty with this criticism of Nozick, however. It is just this: There is no such thing as an unjust initial acquisition of resources; therefore, there is no case to be made for redistributive taxation on the basis of alleged injustices in initial acquisition. This is, to be sure, a bold claim. Moreover, in making it, I contradict not only Nozick’s critics, but Nozick himself, who clearly thinks it is at least possible for there to be injustices in acquisition, whether or not there have in fact been any (or, more realistically, whether or not there have been enough such injustices to justify continual redistributive taxation for the purposes of rectifying them). But here is a case where Nozick has, I think, been too generous to the other side. Rather than attempt —unsatisfactorily, in the view of his critics—to meet the challenge to show that initial acquisition has not in general been unjust, he ought instead to have insisted that there is no such challenge to be met in the first place. Giving what I shall call “the basic argument” for this audacious claim will be the task of Section II of this essay. The argument is, I think, compelling, but by itself it leaves unexplained some widespread intu- itions to the effect that certain specific instances of initial acquisition are unjust and call forth as their remedy the application of a Lockean proviso, or are otherwise problematic. (A “Lockean proviso,” of course, is one that forbids initial acquisitions of resources when these acquisitions do not leave “enough and as good” in common for others.) Thus, Section III focuses on various considerations that tend to show how those intuitions are best explained in a way consistent with the argument of Section II. Section IV completes the task of accounting for the intuitions in question by considering how the thesis of self-ownership itself bears on the acqui- sition and use of property. Section V shows how the results of the previ- ous sections add up to a more satisfying defense of Nozickian property rights than the one given by Nozick himself, and considers some of the implications of this revised conception of initial acquisition for our under- standing of Nozick’s principles of transfer and rectification. II. The Basic Argument The reason there is no such thing as an unjust initial acquisition of resources is that there is no such thing as either a just or an unjust initial acquisition of resources. The concept of justice, that is to say, simply does not apply to initial acquisition. It applies only after initial acquisition has already taken place. In particular, it applies only to transfers of property (and derivatively, to the rectification of injustices in transfer). This, it seems to me, is a clear implication of the assumption (rightly) made by Nozick that external resources are initially unowned. Consider the following example. Suppose an individual A seeks to acquire some previously unowned resource R. For it to be the case that A commits an injustice in acquiring R, it would also have to be the case that there is some individual B (or perhaps a group of individuals) against whom A commits the injustice. But for B to have been wronged by A’s acquisi- tion of R, B would have to have had a rightful claim over R, a right to R. By hypothesis, however, B did not have a right to R, because no one had a right to it—it was unowned, after all. So B was not wronged and could not have been. In fact, the very first person who could conceivably be wronged by anyone’s use of R would be, not B, but A himself, since A is the first one to own R. Such a wrong would in the nature of the case be an injustice in transfer—in unjustly taking from A what is rightfully his—not in initial acquisition. The same thing, by extension, will be true of all unowned resources: it is only after some- one has initially acquired them that anyone could unjustly come to possess them, via unjust transfer. It is impossible, then, for there to be any injustices in initial acquisition.7

## Case

FW-1st point no warrant 2nd point-aggregation fails 2-nonunique 3-not everyone policy maker everyone agent

#### Under consequentalism extinction first-infinite magnitude since death is worst form of evil

#### And on china-they have already surpassed-they have more launches and a private space station

#### Space tech like orbital solar farms can help solve global warming-innovation goes hand in hand

#### Military Precedent proves no escelation from debris

Zarybnisky 18, Eric J. Celestial Deterrence: Deterring Aggression in the Global Commons of Space. Naval War College Newport United States, 2018. (Senior Materiel Leader at United States Air Force)//Elmer

PREVENTING AGGRESSION IN SPACE While deterrence and the Cold War are strongly linked in the public’s mind through the nuclear standoff between the United States and the Soviet Union, the fundamentals of deterrence date back millennia and deterrence remains relevant. Thucydides alludes to the concept of deterrence in his telling of the Peloponnesian War when he describes rivals seeking advantages, such as recruiting allies, to dissuade an adversary from starting or expanding a conflict.6F 6 Aggression in space was successfully avoided during the Cold War because both sides viewed an attack on military satellites as highly escalatory, and such an action would likely result in general nuclear war.7F 7 In today’s more nuanced world, attacking satellites, including military satellites, does not necessarily result in nuclear war. For instance, foreign countries have used highpowered lasers against American intelligence-gathering satellites8F 8 and the United States has been reluctant to respond, let alone retaliate with nuclear weapons. This shift in policy is a result of the broader use of gray zone operations, to which countries struggle to respond while limiting escalation. Beginning with the fundamentals of deterrence illuminates how it applies to prevention of aggression in space.

#### No extinction from disease – burnout and variation checks

York ‘14 (Ian, head of the Influenza Molecular Virology and Vaccines team in the Immunology and Pathogenesis Branch of the Influenza Division at the CDC, PhD in Molecular Virology and Immunology from McMaster University, M.Sc. in Veterinary Microbiology and Immunology from the University of Guelph, former Assistant Prof of Microbiology & Molecular Genetics at Michigan State, “Why Don't Diseases Completely Wipe Out Species?” 6/4/2014, http://www.quora.com/Why-dont-diseases-completely-wipe-out-species)

But mostly diseases don't drive species extinct. There are several reasons for that. For one, the most dangerous diseases are those that spread from one individual to another. If the disease is highly lethal, then the population drops, and it becomes less likely that individuals will contact each other during the infectious phase. Highly contagious diseases tend to burn themselves out that way.¶ Probably the main reason is variation. Within the host and the pathogen population there will be a wide range of variants. Some hosts may be naturally resistant. Some pathogens will be less virulent. And either alone or in combination, you end up with infected individuals who survive.¶ We see this in HIV, for example. There is a small fraction of humans who are naturally resistant or altogether immune to HIV, either because of their CCR5 allele or their MHC Class I type. And there are a handful of people who were infected with defective versions of HIV that didn't progress to disease. ¶ We can see indications of this sort of thing happening in the past, because our genomes contain many instances of pathogen resistance genes that have spread through the whole population. Those all started off as rare mutations that conferred a strong selection advantage to the carriers, meaning that the specific infectious diseases were serious threats to the species.