Consequences do matter, but prefer probabilistic impacts bc, it doesn’t matter how big an impact is if it never happens. Politicians never worry about asteroids hitting the earth even though it would cause human extinction, rather they choose to focus on material suffering and violence that is happening now bc racism and people dying is a guarantee and the more time we focus on large impacts, the less time we can focus on every day impacts.

### Contention 1

#### Police Strikes are used to combat racial progress and attempts to limit police union power. Making them legal and easier only make progress much harder.

Grim 2020 Andrew Grim What is the ‘blue flu’ and how has it increased police power? <https://www.washingtonpost.com/outlook/2020/07/01/what-is-blue-flu-how-has-it-increased-police-power/>SJKS

But the result of such protests matter deeply as we consider police reform today. Historically, blue flu strikes have helped expand police power, ultimately limiting the ability of city governments to reform, constrain or conduct oversight over the police. They allow the police to leverage public fear of crime to extract concessions from municipalities. This became clear in Detroit more than 50 years ago. In June 1967, tensions arose between Detroit Mayor Jerome Cavanagh and the Detroit Police Officers Association (DPOA), which represented the city’s 3,300 patrol officers. The two were at odds primarily over police demands for a pay increase. Cavanagh showed no signs of caving to the DPOA’s demands and had, in fact, proposed to cut the police department’s budget. On June 15, the DPOA escalated the dispute with a walkout: 323 officers called in sick. The number grew over the next several days as the blue flu spread, reaching a height of 800 absences on June 17. In tandem with the walkout, the DPOA launched a fearmongering media campaign to win over the public. They took out ads in local newspapers warning Detroit residents, “How does it feel to be held up? Stick around and find out!” This campaign took place at a time of rising urban crime rates and uprisings, and only a month before the 1967 Detroit riot, making it especially potent. The DPOA understood this climate and used it to its advantage. With locals already afraid of crime and displeased at Cavanagh’s failure to rein it in, they would be more likely to demand the return of the police than to demand retribution against officers for an illegal strike. The DPOA’s strategy paid off. The walkout left Detroit Police Commissioner Ray Girardin feeling “practically helpless.” “I couldn’t force them to work,” he later told The Washington Post. Rather than risk public ire by allowing the blue flu to continue, Cavanagh relented. Ultimately, the DPOA got the raises it sought, making Detroit officers the highest paid in the nation. This was far from the end of the fight between Cavanagh and the DPOA. In the ensuing months and years, they continued to tussle over wages, pensions, the budget, the integration of squad cars and the hiring of black officers. The threat of another blue flu loomed over all these disputes, helping the union to win many of them. And Detroit was not an outlier. Throughout the 1960s, ’70s and ’80s, the blue flu was a [ubiquitous and highly effective](https://www.akpress.org/our-enemies-in-blue.html) tactic in Baltimore, Memphis, New Orleans, Chicago, Newark, New York and many other cities. In most cases, as author Kristian Williams writes, “When faced with a walkout or slowdown, the authorities usually decided that the pragmatic need to get the cops back to work trumped the city government’s long term interest in diminishing the rank and file’s power.” But each time a city relented to this pressure, they ceded more and more power to police unions, which would turn to the strategy repeatedly to defend officers’ interests — particularly when it came to efforts to address systemic racism in police policies and practices. In 1970, black residents of Pittsburgh’s North Side neighborhood raised an outcry over the “hostile sadistic treatment” they experienced at the hands of white police officers. They lobbied Mayor Peter F. Flaherty to assign more black officers to their neighborhood. The mayor agreed, transferring several white officers out of the North Side and replacing them with black officers. While residents cheered this decision, white officers and the Fraternal Order of Police (FOP), which represented them, were furious. They slammed the transfer as “discrimination” against whites. About 425 of the Pittsburgh Police Department’s 1,600 police officers called out sick in protest. Notably, black police officers broke with their white colleagues and refused to join the walkout. They praised the transfer as a “long overdue action” and viewed the walkout as a betrayal of officers’ oath to protect the public. Nonetheless, the tactic paid off. After several days, Flaherty caved to the “open revolt” of white officers, agreeing to halt the transfers and instead submit the dispute to binding arbitration between the city and the police union. Black officers, though, continued to speak out against their union’s support of racist practices, and many of them later resigned from the union in protest. Similar scenarios played out in Detroit, Chicago and other cities in the 1960s and ’70s, as white officers continually staged walkouts to preserve the segregated status quo in their departments. These blue flu strikes amounted to an authoritarian power grab by police officers bent on avoiding oversight, rejecting reforms and shoring up their own authority. In the aftermath of the 1967 Detroit walkout, a police commissioner’s aide strongly criticized the police union’s strong-arm tactics, saying “it smacks of a police state.” The clash left one newspaper editor wondering, “Who’s the Boss of the Detroit Police?” But in the “law and order” climate of the late 1960s, such criticism did not resonate enough to stir a groundswell of public opinion against the blue flu. And police unions dismissed critics by arguing that officers had “no alternative” but to engage in walkouts to get city officials to make concessions. Crucially, the very effectiveness of the blue flu may be premised on a myth. While police unions use public fear of crime skyrocketing without police on duty, in many cases, the absence of police did not lead to a rise in crime. In New York City in 1971, [for example](https://untappedcities.com/2020/06/12/the-week-without-police-what-we-can-learn-from-the-1971-police-strike/), 20,000 officers called out sick for five days over a pay dispute without any apparent increase in crime. The most striking aspect of the walkout, as one observer noted, “might be just how unimportant it seemed.” Today, municipalities are under immense pressure from activists who have taken to the streets to protest the police killings of black men and women. Some have already responded by enacting new policies and cutting police budgets. As it continues, more blue flus are likely to follow as officers seek to wrest back control of the public debate on policing and reassert their independence.

#### These strikes strengthen unions that contribute to increased violence, and protection of misconduct

Serwer 6/24 Serwer, Adam. “Bust the Police Unions.” The Atlantic, Atlantic Media Company, 24 June 2021, www.theatlantic.com/magazine/archive/2021/07/bust-the-police-unions/619006/SJKS

Police unions found that they had new leverage at the bargaining table. In contract negotiations with cities, they sought not merely higher pay or better benefits, but protections for officers accused of misconduct. At this, they proved remarkably successful. Reviewing 82 active police-union contracts in major American cities, a 2017 Reuters investigation found that a majority “call for departments to erase disciplinary records, some after just six months.” Many contracts allow officers to access investigative information about complaints or charges against them before being interrogated, so they can get their stories straight. Some require the officer’s approval before making information regarding misconduct public; others set time limits on when citizens can file complaints. A 2017 Washington Post investigation found that since 2006, of the 1,881 officers fired for misconduct at the nation’s largest departments, 451 had been reinstated because of requirements in union contracts. For many police unions, enacting and enforcing barriers to accountability became a primary concern. In 2014, in San Antonio, the local police union was willing to accept caps on pay and benefits as long as the then–city manager abandoned her efforts to, among other reforms, prevent police from erasing past misconduct records. The damage that these types of provisions have done is hard to overstate. In one recent study, the economist Rob Gillezeau of the University of Victoria found that after departments unionized, there was a “substantial increase” in police killings of civilians. Neither crime rates nor the safety of officers themselves was affected. The provisions do more than simply protect bad actors. They cultivate an unhealthy and secretive culture within police departments, strengthening a phenomenon known as the code of silence. In a 2000 survey of police officers by the National Institute of Justice, only 39 percent of respondents agreed with the statement “Police officers always report serious criminal violations involving abuse of authority by fellow officers.”

#### That leads to endless amounts of racist violence and the bolstering of the prison industrial complex.

Chaney and Ray 13, Cassandra (Has a PhD and is a professor at LSU. Also has a strong focus in the structure of Black families) , and Ray V. Robertson (Also has a PhD and is a criminal justice professor at LSU). "Racism and police brutality in America." *Journal of African American Studies* 17.4 (2013): 480-505. SM//do I really need a card for this

Racism and Discrimination According to Marger (2012), “racism is an ideology, or belief system, designed to justify and rationalize racial and ethnic inequality” (p. 25) and “discrimination, most basically, is behavior aimed at denying members of particular ethnic groups’ equal access to societal rewards” (p. 57). Defining both of these concepts from the onset is important for they provide the lens through which our focus on the racist and discriminatory practices of law enforcement can occur. Since the time that Africans [African Americans] were forcibly brought to America, they have been the victims of racist and discriminatory practices that have been spurred and/or substantiated by those who create and enforce the law. For example, The Watts Riots of 1965, the widespread assaults against Blacks in Harlem during the 1920s (King 2011), law enforcement violence against Black women (i.e., Malaika Brooks, Jaisha Akins, Frankie Perkins, Dr. Mae Jemison, Linda Billups, Clementine Applewhite) and other ethnic women of color (Ritchie 2006), the beating of Rodney King, and the deaths of Amadou Diallo in the 1990s and Trayvon Martin more recently are just a few public examples of the historical and contemporaneous ways in which Blacks in America have been assaulted by members of the police system (King 2011; Loyd 2012; Murch 2012; Rafail et al. 2012). In Punishing Race (2011), law professor Michael Tonry’s research findings point to the fact that Whites tend to excuse police brutality against Blacks because of the racial animus that they hold against Blacks. Thus, to Whites, Blacks are viewed as deserving of harsh treatment in the criminal justice system (Peffley and Hurwitz 2013). At first glance, such an assertion may seem to be unfathomable, buy that there is an extensive body of literature which suggests that Black males are viewed as the “prototypical criminal,” and this notion is buttressed in the media, by the general public, and via disparate sentencing outcomes (Blair et al. 2004; Eberhardt et al. 2006; Gabiddon 2010; Maddox and Gray 2004; Oliver and Fonash 2002; Staples 2011). For instance, Blair et al. (2004) revealed that Black males with more Afrocentric features (e.g., dark skin, broad noses, full lips) may receive longer sentences than Blacks with less Afrocentric features, i.e., lighter skin and straighter hair (Eberhardt et al. 2006). Shaun Gabiddon in Criminological Theories on Race and Crime (2010) discussed the concept of “Negrophobia” which was more extensively examined by Armour (1997). Negrophobia can be surmised as an irrational of Blacks, which includes a fear of being victimized by Black, that can result in Whites shooting or harming an AfricanAmerican based on criminal/racial stereotypes (Armour 1997). The aforementioned racialized stereotypical assumptions can be deleterious because they can be used by Whites to justify shooting a Black person on the slightest of pretense (Gabiddon 2010). Finally, African-American males represent a group that has been much maligned in the larger society (Tonry 2011). Further, as victims of the burgeoning prison industrial complex, mass incarceration, and enduring racism, the barriers to truly independent Black male agency are ubiquitous and firmly entrenched (Alexander 2010; Chaney 2009; Baker 1996; Blackmon 2008; Dottolo and Stewart 2008; Karenga 2010; Martin et al. 2001; Smith and Hattery 2009). Thus, racism and discrimination heightens the psychological distress experienced by Blacks (Robertson 2011; Pieterse et al. 2012), as well as their decreased mortality in the USA (Muennig and Murphy 2011). Police Brutality Against Black Males According to Walker (2011), police brutality is defined as “the use of excessive physical force or verbal assault and psychological intimidation” (p. 579). Although one recent study suggests that the NYPD has become better behaved due to greater race and gender diversity (Kane and White 2009), Blacks are more likely to be the victims of police brutality. A growing body of scholarly research related to police brutality has revealed that Blacks are more likely than Whites to make complaints regarding police brutality (Smith and Holmes 2003), to be accosted while operating [driving] a motorized vehicle (“Driving While Black”), and to underreport how often they are stopped due to higher social desirability factors (TomaskovicDevey et al. 2006). Interestingly, data obtained from the General Social Survey (GSS), a representative sample conducted biennially by the National Opinion Research Center at the University of Chicago for the years 1994 through 2004, provide further proof regarding the acceptance of force against Blacks. In particular, the GSS found Whites to be significantly (29.5 %) more accepting of police use of force when a citizen was attempting to escape custody than Blacks when analyzed using the chi-squared statistical test (p The average Southern policeman is a promoted poor White with a legal sanction to use a weapon. His social heritage has taught him to despise the Negroes, and he has had little education which could have changed him….The result is that probably no group of Whites in America have a lower opinion of the Negro people and are more fixed in their views than Southern policeman. (Myrdal 1944, pp. 540–541) Myrdal (1944) was writing on results from a massive study that he undertook in the late 1930s. He was writing at a time that even the most conservative among us would have to admit was not a colorblind society (if one even believes in such things). But current research does corroborate his observations that less educated police officers tend to be the most aggressive and have the most formal complaints filed against them when compared to their more educated counterparts (Hassell and Archbold 2010; Jefferis et al. 2011). Tonry (2011) delineates some interesting findings from the 2001 Race, Crime, and Public Opinion Survey that can be applied to understanding why the larger society tolerates police misconduct when it comes to Black males. The survey, which involved approximately 978 non-Hispanic Whites and 1,010 Blacks, revealed a divergence in attitudes between Blacks and Whites concerning the criminal justice system (Tonry 2011). For instance, 38 % of Whites and 89 % of Blacks viewed the criminal justice system as biased against Blacks (Tonry 2011). Additionally, 8 % of Blacks and 56 % of Whites saw the criminal justice system as treating Blacks fairly (Tonry 2011). Perhaps most revealing when it comes to facilitating an environment ripe for police brutality against Black males, 68 % of Whites and only 18 % of Whites expressed confidence in law enforcement (Tonry 2011). Is a society wherein the dominant group overwhelming approves of police performance willing to do anything substantive to curtail police brutality against Black males? Police brutality is not a new phenomenon. The Department of Justice (DOJ) office of Civil Rights (OCR) has investigated more than a dozen police departments in major cities across the USA on allegations of either racial discrimination or police brutality (Gabbidon and Greene 2013). To make the aforementioned even more clear, according to Gabbidon and Greene (2013), “In 2010, the OCR was investigating 17 police departments across the country and monitoring five settlements regarding four police agencies” (pp. 119–120). Plant and Peruche (2005) provide some useful information into why police officers view Black males as potential perpetrators and could lead to acts of brutality. In their research, the authors suggest that since Black people in general, and Black males in particular, are caricatured as aggressive and criminal, police are more likely to view Black men as a threat which justifies the disproportionate use of deadly force. Therefore, it is not beyond the realm of possibility that police officers’ decisions to act aggressively may, to some extent, be influenced by race (Jefferis et al. 2011). The media’s portrayals of Black men are often less than sanguine. Bryson’s (1998) work in this area provides empirical evidence that the mass media that has been instrumental in portraying Black men as studs, super detectives, or imitation White men and has a general negative effect on how these men are regarded by others. Such characterizations can be so visceral in nature that “prototypes” of criminal suspects are more likely to be African-American (Oliver et al. 2004). Not surprisingly, the more Afrocentric the African-American’s facial features, the more prone he or she is expected to be deviant (Eberhardt et al. 2006). Interestingly, it is probable that less than flattering depictions of Black males on television and in news stories are activating pre-existing stereotypes possessed by Whites as opposed to facilitating their creation. According to Oliver et al. (2004), “it is important to keep in mind that media consumption is an active process, with viewers’ existing attitudes and beliefs playing a larger role in how images are attended to, interpreted, and remembered” (p. 89). Moreover, it is reductionist to presuppose that individual is powerless in constructing a palatable version of reality and is solely under the control of the media and exercises no agency. Lastly, Peffley and Hurwitz (2013) describe what can be perceived as one of the more deleterious results of negative media caricatures of Black males. More specifically, the authors posit that most Whites believe that Blacks are disproportionately inclined to engage in criminal behavior and are the deserving on harsh treatment by the criminal justice system. On the other hand, such an observation is curious because most urban areas are moderate to highly segregated residentially which would preclude the frequent and significant interaction needed to make such scathing indictments (Bonilla-Silva 2009). Consequently, the aforementioned racial animus has the effect of increased White support for capital punishment if questions regarding its legitimacy around if capital punishment is too frequently applied to Blacks (Peffley and Hurwitz 2013; Tonry 2011). Ultimately, erroneous (negative) portrayals of crime and community, community race and class identities, and concerns over neighborhood change all contribute to place-specific framing of “the crime problem.” These frames, in turn, shape both intergroup dynamics and support for criminal justice policy (Leverentz 2012).

### Contention 2

#### Hospital Strikes are devastating to public health infrastructure and patient care and sky-rocket costs – hospital strikes are relatively low now but the Plan green-lights more aggressive Strike actions.

Masterson 17 Les Masterson 8-15-2017 "Nursing strikes can cause harm well beyond labor relations" <https://www.healthcaredive.com/news/nursing-strikes-can-cause-harm-well-beyond-labor-relations/447627/> (Senior Managing Editor at Quinstreet)//Elmer

Officials said the lockout was required because they needed to give at least five-day contracts to 320 temporary nurses brought in to fill the gap. The nurses are back on the job now without a new contract, but the strike and subsequent lockout got the public’s attention. **Hospital strikes aren't** that **common** — usually, the sides agree to a new contract. Strikes or threatened strikes in recent years have typically involved conflicts over pay, benefits and staff workloads. **When strikes do happen**, however, **they can hurt a hospital’s reputation, finances and patient care**. Strike’s effect on patient safety A **study** on nurses’ strikes in New York **found** that labor actions have a temporary **negative effect on** a hospital’s **patient safety**. Study authors Jonathan Gruber and Samuel A. Kleiner found that nurses’ strikes **increased** **in-patient mortality by 18.3%** **and 30-day readmission by 5.7%** for patients admitted during the strike. **Patients admitted during a strike got a lower quality of care, they wrote.** “We show that this deterioration in outcomes occurs only for those patients admitted during a strike, and not for those admitted to the same hospitals before or after a strike. And we find that these changes in outcomes are not associated with any meaningful change in the composition of, or the treatment intensity for, patients admitted during a strike,” they said. They said a possible reason for the lower quality is fewer major procedures performed during a strike, which could lead partially to diminished outcomes. The study authors found that **patients that need the most** nursing **care** **are** **the ones who make out worst during strikes.** “We find that patients with particularly nursing-intensive conditions are more susceptible to these strike effects, and that hospitals hiring replacement workers perform no better during these strikes than those that do not hire substitute employees,” they wrote. Allina Health’s Abbott Northwestern Hospital in Minneapolis faced a patient safety issue during a strike last year that resulted in the CMS placing the hospital in “immediate jeopardy” status after a medication error. A replacement nurse administered adrenaline to an asthmatic patient through an IV rather than into the patient’s muscle. The patient, who was in the emergency room (ER), wound up in intensive care for three days because of the error. Allina said the error was not the nurse’s fault, but was the result of a communication problem. The CMS accepted the hospital plan of correction, which included having a nurse observer when needed and retraining ER staff to repeat back verbal orders. A strike’s financial impact **Hospitals** also **take** a **financial hit during strikes.** **Even the threat of** a **one- or two-day nurse strike** **can cost a hospital millions.** **Bringing in** hundreds or **thousands of temporary nurses** from across the country **is costly** for hospitals. They need to advertise the positions, pay for travel and often give bonuses to lure temporary nurses. The most expensive recent nurse strike was when about 4,800 nurses went on strike at Allina Health in Minnesota two times last year. **The two strikes of seven days and 41 days cost the health system $104 million.** The hospital also saw a $67.74 million operating loss during the quarter of those strikes. To find temporary replacements, Allina needed to include enticing offers, such as free travel and a $400 bonus to temporary nurses. Even the threat of a strike can cost millions. Brigham and Women’s **Hospital** in Boston spent more than $8 million and **lost $16 million** in revenue **preparing for a strike** in 2016. The 3,300-nurse union threatened to walk out for a day and much like Tufts Medical Center, Brigham & Women’s said the hospital would lock out nurses for four additional days if nurses took action. At that time, Dr. Ron Walls, executive vice president and chief operating officer at Brigham and Women’s Hospital, said the hospital spent more than $5 million on contracting with the U.S. Nursing Corp. to bring on 700 temporary nurses licensed in Massachusetts. The hospital also planned to cut capacity to 60% during the possible strike and moved hundreds of patients to other hospitals. They also canceled procedures and appointments in preparation of a strike. The Massachusetts Nurses Association and Brigham & Women’s were able to reach a three-year agreement before a strike, but the damage was already done to the hospital’s finances. Richard L. Gundling, senior vice president of healthcare financial practices at Healthcare Financial Management Association, told Healthcare Dive that healthcare organizations need to plan for business continuity in case of an event, such as a labor strike, natural disaster or cyberattack. “Business continuity is directly related to the CFO’s responsibility for maintaining business functions. The plan should include having business continuity insurance in place to replace the loss associated with diminished revenue and increased expenses during the event,” Gundling said. These plans should provide adequate staffing, training, materials, supplies, equipment and communications in case of a strike. Hospitals should also keep payers, financial agencies and other important stakeholders informed of potential issues. “It’s also key to keep financial stakeholders well informed; this includes insurance companies, bond rating agencies, banks, other investors, suppliers and Medicare/Medicaid contractors,” he said. “Business continuity is directly related to the CFO’s responsibility for maintaining business functions. The plan should include having business continuity insurance in place to replace the loss associated with diminished revenue and increased expenses during the event." Richard Gundling Senior vice president of healthcare financial practices, Healthcare Financial Management Association Impact to a hospital’s reputation Hospital strikes, particularly nurses’ strikes, can also wreak havoc on a hospital’s reputation. Nurses are a beloved profession. They work hard, often long hours and don’t make a fortune doing it. The median registered nurses’ salary is about $70,000, according to the Bureau of Labor Statistics.

#### High Hospital Costs force closures – COVID puts them on the brink.

Thompson 2-26 Dennis Thompson 2-26-2021 "Pandemic Is Hitting Hospitals Hard, Including Their Bottom Line" https://consumer.healthday.com/2-26-pandemic-is-hitting-hospitals-hard-including-their-bottom-line-2650625725.html (Healthday Reporter)//Elmer

FRIDAY, Feb. 26, 2021 (HealthDay News) -- **U.S. hospitals** are expected to lose billions again in 2021, leaving them **in dire financial shape** **as** the **COVID**-19 pandemic **guts** the **industry** for a second year. Hospitals could lose $53 billion to $122 billion in revenue in 2021, between 4% and 10% of their total revenue, according to an analysis prepared by consulting firm Kaufman Hall & Associates for the American Hospital Association. These revenue declines would come on top of $320 billion in lost revenue in 2020, said Rick Pollack, the hospital association's president and CEO. The reasons? Hospitals are spending more to treat COVID-19 patients as well as maintain regular operations during the pandemic, Pollack said. At the same time, drug expenses increased by 17% in 2020; labor by 14%; and supplies by 13%, the Kaufman Hall report says. "All those **expenses keep going up**, and **at least four dozen hospitals entered bankruptcy** in 2020 according to data compiled by Bloomberg," Pollack said. "**This is of particular concern** for rural hospitals," he added. "**Nineteen** rural **hospitals closed in 2020**, and **135 have closed since 2010.** In many of these rural areas, residents lack other options for dependable care." Labor costs have increased because hospitals have had to hire part-time contract workers to cover for employees exposed to COVID-19, said David Ramsey, president and CEO of the Charleston Area Medical Center and Health System in West Virginia.

#### Hospitals are the critical internal link for pandemic preparedness.

Al Thobaity 20, Abdullelah, and Farhan Alshammari. "Nurses on the frontline against the COVID-19 pandemic: an Integrative review." Dubai Medical Journal 3.3 (2020): 87-92. (Associate Professor of Nursing at Taif University)//SJDH

The majority of infected or symptomatic people seek medical treatment in medical facilities, particularly hospitals, as a high number of cases, especially those in critical condition, will have an impact on hospitals [4]. The concept of hospital resilience in disaster situations is defined as the ability to recover from the damage caused by huge disturbances quickly [2]. The resilience of hospitals to pandemic cases depends on the preparedness of the institutions, and not all hospitals have the same resilience. A lower resilience will affect the **sustainability of the health services**. This also affects healthcare providers such as doctors, nurses, and allied health professionals [5, 6]. Despite the impact on healthcare providers, excellent management of a pandemic depends on the level of **preparedness of healthcare providers, including nurses**. This means that if it was impossible to be ready before a crisis or disaster, responsible people will do all but the impossible to save lives.

#### Future pandemics will cause extinction – it only takes one ‘super-spreader’ – US prevention is key

Bar-Yam 16 Yaneer Bar-Yam 7-3-2016 “Transition to extinction: Pandemics in a connected world” <http://necsi.edu/research/social/pandemics/transition> (Professor and President, New England Complex System Institute; PhD in Physics, MIT)

Watch as one of the more aggressive—brighter red — strains rapidly expands. After a time it goes extinct leaving a black region. Why does it go extinct? The answer is that it spreads so rapidly that it kills the hosts around it. Without new hosts to infect it then dies out itself. That the rapidly spreading pathogens die out has important implications for evolutionary research which we have talked about elsewhere [1–7]. In the research I want to discuss here, what we were interested in is the effect of adding long range transportation [8]. This includes natural means of dispersal as well as unintentional dispersal by humans, like adding airplane routes, which is being done by real world airlines (Figure 2). When we introduce long range transportation into the model, the success of more aggressive strains changes. They can use the long range transportation to find new hosts and escape local extinction. Figure 3 shows that the more transportation routes introduced into the model, the more higher aggressive pathogens are able to survive and spread. As we add more long range transportation, there is a critical point at which pathogens become so aggressive that the entire host population dies. The pathogens die at the same time, but that is not exactly a consolation to the hosts. We call this the phase transition to extinction (Figure 4). With increasing levels of global transportation, human civilization may be approaching such a critical threshold. In the paper we wrote in 2006 about the dangers of global transportation for pathogen evolution and pandemics [8], we mentioned the risk from Ebola. Ebola is a horrendous disease that was present only in isolated villages in Africa. It was far away from the rest of the world only because of that isolation. Since Africa was developing, it was only a matter of time before it reached population centers and airports. While the model is about evolution, it is really about which pathogens will be found in a system that is highly connected, and Ebola can spread in a highly connected world. The traditional approach to public health uses historical evidence analyzed statistically to assess the potential impacts of a disease. As a result, many were surprised by the spread of Ebola through West Africa in 2014. As the connectivity of the world increases, past experience is not a good guide to future events. A key point about the phase transition to extinction is its suddenness. Even a system that seems stable, can be destabilized by a few more long-range connections, and connectivity is continuing to increase. So how close are we to the tipping point? We don’t know but it would be good to find out before it happens. While Ebola ravaged three countries in West Africa, it only resulted in a handful of cases outside that region. One possible reason is that many of the airlines that fly to west Africa stopped or reduced flights during the epidemic [9]. In the absence of a clear connection, public health authorities who downplayed the dangers of the epidemic spreading to the West might seem to be vindicated. As with the choice of airlines to stop flying to west Africa, our analysis didn’t take into consideration how people respond to epidemics. It does tell us what the outcome will be unless we respond fast enough and well enough to stop the spread of future diseases, which may not be the same as the ones we saw in the past. As the world becomes more connected, the dangers increase. Are people in western countries safe because of higher quality health systems? Countries like the U.S. have highly skewed networks of social interactions with some very highly connected individuals that can be “superspreaders.” The chances of such an individual becoming infected may be low but events like a mass outbreak pose a much greater risk if they do happen. If a sick food service worker in an airport infects 100 passengers, or a contagion event happens in mass transportation, an outbreak could very well prove unstoppable.

# Case

#### Extinction from warming requires 12 degrees, far greater than their internal link, and intervening actors will solve before then

Sebastian Farquhar 17, leads the Global Priorities Project (GPP) at the Centre for Effective Altruism, et al., 2017, “Existential Risk: Diplomacy and Governance,” https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf

The most likely levels of global warming are very unlikely to cause human extinction.15 The existential risks of climate change instead stem from tail risk climate change – the low probability of extreme levels of warming – and interaction with other sources of risk. It is impossible to say with confidence at what point global warming would become severe enough to pose an existential threat. Research has suggested that warming of 11-12°C would render most of the planet uninhabitable,16 and would completely devastate agriculture.17 This would pose an extreme threat to human civilisation as we know it.18 Warming of around 7°C or more could potentially produce conflict and instability on such a scale that the indirect effects could be an existential risk, although it is extremely uncertain how likely such scenarios are.19 Moreover, the timescales over which such changes might happen could mean that humanity is able to adapt enough to avoid extinction in even very extreme scenarios. The probability of these levels of warming depends on eventual greenhouse gas concentrations. According to some experts, unless strong action is taken soon by major emitters, it is likely that we will pursue a medium-high emissions pathway.20 If we do, the chance of extreme warming is highly uncertain but appears non-negligible. Current concentrations of greenhouse gases are higher than they have been for hundreds of thousands of years,21 which means that there are significant unknown unknowns about how the climate system will respond. Particularly concerning is the risk of positive feedback loops, such as the release of vast amounts of methane from melting of the arctic permafrost, which would cause rapid and disastrous warming.22 The economists Gernot Wagner and Martin Weitzman have used IPCC figures (which do not include modelling of feedback loops such as those from melting permafrost) to estimate that if we continue to pursue a medium-high emissions pathway, the probability of eventual warming of 6°C is around 10%,23 and of 10°C is around 3%.24 These estimates are of course highly uncertain.

It is likely that the world will take action against climate change once it begins to impose large costs on human society, long before there is warming of 10°C. Unfortunately, there is significant inertia in the climate system: there is a 25 to 50 year lag between CO2 emissions and eventual warming,25 and it is expected that 40% of the peak concentration of CO2 will remain in the atmosphere 1,000 years after the peak is reached.26 Consequently, it is impossible to reduce temperatures quickly by reducing CO2 emissions. If the world does start to face costly warming, the international community will therefore face strong incentives to find other ways to reduce global temperatures.