#### I affirm the resolution, Resolved: The appropriation of outer space by private entities is unjust.

We will defend any implementation that fits with the frmaign.

### Framing

#### The standard is maximizing expected net well-being, and we defend justice as defending maximizing expected well being.

#### 1] Only pleasure and pain are intrinsically valuable – all other frameworks collapse.

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

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.3 As Aristotle observes: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value.

#### 2] Death ontologically destroys the subject and the possibility of agency

#### 3] Policy makers are unfamiliar with the effects on specific individuals---- they only use averages and aggregates which requires util

Gooden 95 (Robert, philsopher at the Research School of the Social Sciences, Utilitarianism as Public Philosophy. P. 62-63) //

Consider, first, the argument from necessity. **Public officials are obliged to make their choices under uncertainty**, and uncertainty of a very special sort at that. All choices—public and private alike—are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have on them. **Public officials, in contrast, are relatively poorly informed as to the effects that their choices will have on individuals**, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices. But that is all. That is enough to allow public policy-makers to use the utilitarian calculus—if they want to use it at all—to choose general rules of conduct. **Knowing aggregates and averages, they can proceed to calculate the utility payoffs from adopting each alternative** possible general rule. But they cannot be sure what the payoff will be to any given individual or on any particular occasion. Their knowledge of generalities, aggregates and averages is just not sufficiently fine-grained for that.

#### 4] No act-omission or intent-foresight distinction- govt’s have to permit and prohibit so inaction is an action. Calc possible- indicts only prove hard, not impossible and they’re empirically false

### Adv 1

#### Space debris exists in the squo of space exploration and will get worse as private appropriation expands, and more space debris means possible collisions that could destroy space materials.

Muñoz-Patchen 18 (Muñoz-Patchen, Chelsea (research assistant for Professors Daniel Abebe and Jonathan Masur, focusing on intellectual property and constitutional law, associate for the Houston law offices of Latham and Watkins), 8-16-18, “Regulating the Space Commons: Treating Space Debris as Abandoned Property in Violation of the Outer Space Treaty,” Chicago Journal of International Law, Vol 19, No.1, Article 7, pg. 239-240 https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1741&context=cjil)

This issue is of growing importance as more nations and companies gain the ability to launch satellites and other objects into space.37 From February 2009 through the end of 2010, more than thirty-two collision-avoidance maneuvers were reportedly used to avoid debris by various space agencies and satellite companies, and as of March 2012, the crew of the International Space Station (ISS) had to take shelter three times due to close calls with passing debris.38 These maneuvers require costly fuel usage and place a strain on astronauts.39 Furthermore, the launches of some spacecraft have “been delayed because of the presence of space debris in the planned flight paths.” 40 In 2011, Euroconsult, a satellite consultant, projected that there would be “a 51% increase in satellites launched in the next decade over the number launched in the past decade.” 41 In addition to satellites, the rise of commercial space tourism will also increase the number of objects launched into space and thus the amount of debris.42 The more objects are sent into space, and the more collisions create cascades of debris, the greater the risk of damage to vital satellites and other devices relied on for “weather forecasting, telecommunications, commerce, and national security.” The Space Debris Mitigation Guidelines44 were created by UNCOPUOS with input from the IADC and adopted in 2007.45 The guidelines were developed to address the problem of space debris and were intended to “increase mutual understanding on acceptable activities in space.” 46 These guidelines are nonbinding but suggest best practices to implement at the national level when planning for a launch. Many nations have adopted the guidelines to some degree, and some have gone beyond what the guidelines suggest.47 While the guidelines do not address existing debris, they do much to prevent the creation of new debris. The Kessler Syndrome is the biggest concern with space debris. The Kessler Syndrome is a cascade created when debris hits a space object, creating new debris and setting off a chain reaction of collisions that eventually closes off entire orbits.48 The concern is that this cascade will occur when a tipping point is reached at which the natural removal rate cannot keep up with the amount of new debris added.49 At this point a collision could set off a cascade destroying all space objects within the orbit.50 In 2011, The National Research Council predicted that the Kessler Syndrome could happen within ten to twenty years.51 Donald J. Kessler, the astrophysicist and NASA scientist who theorized the Kessler Syndrome in 1978, believes this cascade may be a century away, meaning that there is still time to develop a solution.52

#### Private companies will only add to the effect of Kessler syndrome, and because mining is important it is important private companies don’t get to appropriate space. Haroun et al ‘21

[Fawaz Haroun, Shalom Ajibade, Philip Oladimeji, and John Kennedy Igbozurike.New Space.Mar 2021.63-71.http://doi.org/10.1089/space.2020.0047]kitkat

To begin with**, it is near impossible that a mission will not generate any debris at all.** Hence, going by the polluters-pay principle, every launch ought to pay a particular amount for this debris creation. Such a regime can be made possible through ensuring that every launch pays particular amounts in the form of solidarity contribution to the funding of space debris removal. Furthermore, **with the prospects of space mining, it is suggested that the UN is placed in a position to be evinced as holding the outer space in common for the benefit of all, thereby encouraging states to empower the UNCOUPUOS**§§§§ in mining matters just as they did in the ITU in orbital space. Therefore, the UNCOUPUOS may now evolve a form of licensing system under which states may acquire licenses to mine particular amounts of land mass on celestial bodies for a particular number of years. Although the first few years of these licenses should be free, at least to give the industry time to attain its balance, subsequent licenses should be acquired for a consideration determined by UNCOUPUOS.\*\*\*\*\* The proceeds from these licenses may then be split between footing the running costs of the framework and beneficial projects in outer space.

#### Mining from space will be important as our economy grows in order to sustain the environment. MIT Tech Review ‘18

[MIT Technology Review, October 19, 2018 https://www.technologyreview.com/2018/10/19/139664/asteroid-mining-might-actually-be-better-for-the-environment/]kitkat

But profit margins are only part of the picture. A potentially more significant aspect of these missions is the impact they will have on Earth’s environment. But nobody has assessed this environmental impact in detail.

Today, that changes thanks to the work of Andreas Hein and colleagues at the University of Paris-Saclay in France. These guys have calculated the greenhouse-gas emissions from asteroid-mining operations and compared them with the emissions from similar Earth-based activities. Their results provide some eyebrow-raising insights into the benefits that asteroid mining might provide.

The calculations are relatively straightforward. Rocket launches release significant amounts of greenhouse gases into the atmosphere. The fuel on board the first stage of a rocket burns in Earth’s atmosphere to form carbon dioxide. For kerosene-burning rockets, one kilogram of fuel creates three kilograms of CO2. (The second and third stages operate outside the Earth’s atmosphere and so can be ignored.)

Reentries are just as damaging. That’s because a significant mass of a re-entering vehicle ablates in the upper atmosphere, producing NOx such as nitrous oxide (N2O), a greenhouse gas that is about 300 times more potent than CO2. By one estimate, the space shuttle released about 20% of its mass in the form of N2O every time it returned to Earth.

Hein and co use these numbers to calculate that a kilogram of platinum mined from an asteroid would release some 150 kilograms of CO2 into Earth’s atmosphere. However, economies of scale from large asteroid-mining operations could lower this to about 60 kilograms of CO2 per kilogram of platinum.

That needs to be compared with the emission from Earth-based mining. Here, platinum mining generates significant greenhouse gases, mostly from the energy it takes to remove this stuff from the ground.

Indeed, the numbers are huge. **The mining industry estimates that producing one kilogram of platinum on Earth releases around 40,000 kilograms of carbon dioxide. “The global warming effect of Earth-based mining is several orders of magnitude larger,” say Hein and co.**

The figures for water are also encouraging. In this case, the authors calculate the greenhouse-gas emissions from an asteroid-mining operation that returns water to anywhere within the moon’s orbit, a so-called cis-lunar orbit. They compare this to the emissions from sending the same volume of water from Earth into orbit.

The big difference is that a water-carrying vehicle from Earth can haul only a small percentage of its mass as water. But an asteroid-mining spacecraft can transport a significant multiple of its mass as water to cis-lunar orbit. “**Substantial savings in greenhouse gas emissions can be achieved,”** say Hein and co.

This interesting work should help to focus minds on the environmental impacts of mining, which are rapidly increasing in profile. But it is only a first step. There is significant uncertainty in the numbers here, so these will need to be better understood.

#### Climate change causes extinction – their defense doesn’t assume co-extinctions

Strona and Bradshaw 18 – [(Giovanni, Ecologist at the Research Centre for Ecological Change - University of Helsinki and works for the European Commission, Joint Research Centre; Corey, Matthew Flinders Fellow in Global Ecology at Flinders University of South Australia) “Co-extinctions annihilate planetary life during extreme environmental change,” 11-13-2018, pg. 1-2]TDI2020

Being in the midst of the sixth mass extinction1 , it is fitting to quantify the relative contribution of different mechanisms driving catastrophic biodiversity loss. Drivers directly related to anthropogenic modifications of the biosphere are apparent and well-described: habitat destruction, over-exploitation, and biotic invasions2 . Similarly, the effects of environmental change (e.g., temperature rise, increased droughts, ocean acidification, et cetera) can be easily interpreted — when the environmental conditions of a certain locality become incompatible with the tolerance limits of inhabiting species, in many cases these will go locally extinct, just like fish in an aquarium with a broken thermostat (even if there are counter examples of species that have been capable of rapid adaptation to novel environmental conditions3 ). Yet, there are other, more complicated mechanisms that can exacerbate species loss. In particular, it is becoming increasingly evident how biotic interactions, in addition to permitting the emergence and maintenance of diversity, also build up complex networks through which the loss of one species can make more species disappear (a process known as ‘co-extinction’), and possibly bring entire systems to an unexpected, sudden regime shift, or even total collapse4–9 . In a simplified view, the idea of co-extinction reduces to the obvious conclusion that a consumer cannot survive without its resources. Because resource and consumer interactions in natural systems (e.g., food webs) are organized in various hierarchical levels of complexity (e.g., trophic levels), it follows that the removal of resources could result in the cascading (bottom-up) extinction of several higher-level consumers8,10. Several studies based on either simulated or real-world data suggest that we should expect most events of species loss to cause co-extinctions5 , as corroborated by the worrisome, unnatural rate at which populations and species are now disappearing11, and which goes far beyond what one expects as a simple consequence of human endeavour1 . In fact, even the most resilient species will inevitably fall victim to the synergies among extinction drivers2 as extreme stresses drive biological communities to collapse. Furthermore, co-extinctions are often triggered well before the complete loss of an entire species12, so that even oscillations in the population size of a species could result in the local disappearance of other species depending on the frst13. This makes it difficult to be optimistic about the future of species diversity in the ongoing trajectory of global change, let alone in the case of additional external, planetary-scale catastrophes. A previous study14 contended this idea by using the remarkable tolerance of tardigrades to extreme temperature, pressure, and radiation as a reference to calculate the likelihood of global sterilization on an Earth-like planet following different, dramatic astrophysical events. The stunning conclusion of that study is that life on our planet has the potential to survive asteroid impacts, supernovae, and gamma-ray bursts14. This ostensibly reassuring news highlights how some scientists still tend to disregard the role of co-extinctions within collapsing communities in driving global biodiversity loss, while focusing on individual species’ tolerance limits as the only criteria relevant to species survival in a changing world. Ecologists know the optimism is not supported quantitatively, but can we estimate the magnitude of the bias?

#### The rise in space debris triggers conflict because it is hard to tell whether the strikes were accidental or acts of political aggression.

Sample 16 (Sample, Ian (science editor of the Guardian. Before joining the newspaper in 2003, he was a journalist at New Scientist and worked at the Institute of Physics as a journal editor. He has a PhD in biomedical materials from Queen Mary's, University of London),1-22-2016, "Rise in space junk could provoke armed conflict say scientists," https://www.theguardian.com/science/2016/jan/22/rise-in-space-junk-could-provoke-armed-conflict-say-scientists)

In a report to be published in the journal [Acta Astronautica](http://www.journals.elsevier.com/acta-astronautica/), Vitaly Adushkin at the Russian Academy of Sciences in Moscow writes that impacts from space junk, especially on military satellites, posed a “special political danger” and “may provoke political or even armed conflict between space-faring nations. The owner of the impacted and destroyed satellite can hardly quickly determine the real cause of the accident.”

Adushkin adds that in recent decades there have been repeated sudden failures of defence satellites which have never been explained. But there are only two possibilities, he claims: either unregistered collisions with space debris, or an aggressive action by an adversary. “This is a politically dangerous dilemma,” he writes.

#### Space conflicts go nuclear, especially when triggered by disrupted communication ability.

**Grego 15** [LAURA GREGO is a physicist in the Global Security program at UCS. She is an expert in space weapons and security; ballistic missile proliferation; and ballistic missile defense. "Preventing Space War." https://allthingsnuclear.org/lgrego/preventing-space-war]

So says a very good New York Times editorial “Preventing a Space War” this week. Sounds right, if X-Wing fighters come to mind when you think space conflict. But in reality conflict in space is both more likely than one would think and **less likely** to be so **photogenic**. Space as a locus of conflict The Pentagon has known that space could be a flash point at least since the late 1990s when it began including satellites and space weapons in earnest as part of its wargames. The early games revealed some surprises. For example, attacking an adversary’s ground-based anti-satellite weapons before they were used could be the “trip wire” that starts a war: in the one of the first war games, an attack on an enemy’s ground-based lasers was meant to defuse a potential conflict and protect space assets, but instead was interpreted as an act of war and initiated hostilities. The games also revealed that **disrupting** space-based **communication** and information flow or “**blinding**” could **rapidly escalate a war**, eventually leading to **nuclear weapon exchange.** The war games have **continued** over the years with increased **sophistication**, but continue to find that conflicts can **rapidly escalate and become global** when space weapons are **involved**, and that even **minor opponents** can create **big problems**. The report back from the 2012 game, which included **NATO partners**, said these insights have become “virtually axiomatic.” Participants in the most recent Schriever war games found that when **space weapons** were introduced in a **regional crisis**, it **escalated quickly** and was difficult to **stop from spreading**. The compressed timelines, the global as well as dual-use nature of space assets, the difficulty of attribution and seeing what is happening, and the inherent vulnerability of satellites all contribute to this problem. Satellite vulnerability & solutions Satellites are valuable but, at least on an individual basis, physically vulnerable. Vulnerable in that they are relatively fragile, as launch mass is at a premium and so protective armor is too expensive, and a large number of low-earth-orbiting satellites are no farther from the earth’s surface than the distance from Boston to Washington, DC.

#### Even a limited nuclear war kills millions of people and cause extinction.

MacDonald 17 (MacDonald, James. August 26, 2017. “The Environmental Impact of Nuclear War.” JSTOR Daily. Retrieved from: <https://daily.jstor.org/the-environmental-impact-of-nuclear-war/#:~:text=Even%20a%20limited%20nuclear%20war,more%20than%20one%20degree%20Celsius.&text=Fires%20from%20even%20a%20limited,sunlight%20and%20lower%20global%20temperatures> on 12/8/2020)

North Korea is getting closer to mastering ballistic missile technology, and the U.S., a longstanding nuclear power, is displeased. Bellicose threats from both sides have revived memories of Cold War fears. Obviously nothing good would happen to anyone directly in the path of a nuclear blast. But what about everyone else? With all-out nuclear apocalypse unlikely, some researchers (climatologist Alan Robock, Brian Toon, a professor of atmospheric and oceanic sciences, and four colleagues) turned their attention to the possibility of a smaller-scale **nuclear war.** Specifically, they examined potential outcomes of a limited war between nuclear rivals India and Pakistan. Their model assumes that urban areas would be targeted and around 100 weapons deployed. The outlook? Poor. According to their research, independently verified climate models suggest that fires from even a limited war would throw enough soot into the atmosphere to block sunlight and lower global temperatures by more than one degree Celsius (for comparison, the Last Glacial Maximum was only 5 degrees cooler). The temperature drop would not be evenly distributed, with larger drops in continental interiors. These are the most agriculturally rich areas, so disruptions there have the potential to lead to widespread food insecurity (what the researchers call “nuclear famine”). The temperature change would likely reduce and disrupt global precipitation as well. To make matters worse, soot in the upper atmosphere has the potential to globally deplete the planet’s protective ozone layer, further affecting plant growth and human health. All this in addition to the millions killed in the actual war, of course. Even those far removed from the blast zone could suffer. A global production decline would likely have dire consequences for net food importers, even wealthy industrial nations. Poor nations would fare even worse. The models predict that even powerful China might face widespread famine from a limited, regional war. It is less clear whether the effects would be as severe farther away, for example, in North America. Even as the immediate effects die down, studies indicate that ill effects could linger for years. In the 1980s, researchers Herbert D. Grover and Mark A. Harwell examined what the lasting impacts on ecosystems might be. Data from nuclear test sites has shown that radiation may linger in soil, plants, and in food chains. Children in the Marshall Islands experienced thyroid problems long after nuclear tests. Marine food chains are particularly vulnerable both to radiation and the disruptive effects of atmospheric soot. So what would happen in a nuclear conflict between the U.S. and North Korea? A lot would depend on the details, but the worst effects would be felt on the Korean Peninsula and in surrounding areas. This area would likely be hit by more weapons then the U.S. mainland, and the models suggest that regional impacts are highest. No model has taken global climate change into account; some cooling may be offset by rising temperatures. On the bright side, ecosystems can recover. But they may not be useable by humans for a very long time.

### Adv 2

#### Private corporation space mining destroys the African economy by taking investment away from Africa.

Oni 19 [(David, a space industry and technology analyst at Space in Africa. He’s a graduate of Mining Engineering from the Federal University of Technology Akure.) “The Effect of Asteroid Mining on Mining Activities in Africa,” Africa News, 9/24/19, <https://africanews.space/the-effect-of-asteroid-mining-on-mining-activities-in-africa/>]

At the moment, Asteroid mining poses no threat to terrestrial mining; however, this will not hold for long. The space industry is progressing at such a rapid pace, and the prospects are unequivocally mouth-watering. The big question is, will asteroid mining lure away investors in Africa? The planetary resources company estimates that a single 30-m asteroid may contain 30 billion dollars in platinum alone and a 500m rock could contain half the entire world resources of PGM. Considering the abundance of minerals in asteroids, once asteroid mining materialises, it will severely affect the precious metals market, usurp the prices of rare earth minerals, and a whole lot more because minerals that are usually somewhat scarce on earth will be easily accessible on asteroids. While foreign investors run the majority of the large-scale mining activities in the region, reports say that many African countries are dangerously dependent on mining activities. For some African countries, despite massive mineral wealth, their mining sectors are underdeveloped, and this is as a result of much focus on oil resources and a couple of other challenges. The million-dollar question is, what will become of the mining activities in Africa?

#### Economic decline causes Africa war

Tollefsen 17 [(Andreas Forø, Peace Research Institute Oslo (PRIO) and Ph.D. in Human Geography from the University of Oslo) “Experienced poverty and local conflict violence," Conflict Management and Peace Science, 12/21/17, <https://www.researchgate.net/publication/320740608_Experienced_poverty_and_local_conflict_violence>]

Civil wars are more frequent than any other type of conflict in the modern era, with the majority occurring in low-income countries (Hegre and Sambanis, 2006; Jakobsen et al., 2013). While most country-level studies find that poverty and inadequate economic development increase the risk of conflict—a relationship that appears to be causal (Braithwaite et al., 2016)—we lack consensus on the precise mechanisms driving this phenomenon (Justino, 2009). Researchers have explained a correlation between low GDP per capita and conflict using diverse hypotheses, including lowered opportunity costs for individuals to rebel (Collier et al., 2009) and responses to a state’s weak capacity (Fearon and Laitin, 2003).

However, as argued by Hegre (2016), development’s highly correlated indicators make it difficult to distinguish between the theoretical mechanisms underlying the development– conflict nexus. Moreover, previously proposed models often represent processes operating on various geographical scales at individual, group, and state levels. Few researchers have backed up theoretical expectations with data at scientifically fitting levels of analysis, consequently ignoring intra-country variations of explanatory variables and outcomes. Furthermore, aggregated measures are incapable of capturing significant variations in economic conditions (Elbers et al., 2003) and conflict intensity (Rustad et al., 2011) within countries. In addition, conflict areas are, in general, atypical of a nation as a whole (Buhaug and Lujala, 2005), which calls for a subnational level analysis.

Addressing these disconnects—and the fact that most conflict operates at a local level (Rustad et al., 2011)—a recent body of studies has focused on how subnational variations in poverty determine the locations within a country where conflicts break out (Buhaug et al., 2011; Hegre et al., 2009; Østby et al., 2009). To date, their findings are largely mixed, with no consensus yet on strength, direction, or mechanisms behind the relationship. The problem here may be the use of varying proxies for poverty that are only loosely linked to the rationale for conflict and/or insufficient attention on the local sociopolitical context.

The present study’s empirical contributions seek to help rectify the inadequate measures of poverty that have come to characterize the literature. To begin with, the article improves our understanding of whether and where a local poverty–conflict nexus exists by deploying experiential data on individuals’ actual wellbeing—which I argue is more closely connected to people’s motives and rationale for taking up arms. Second, the article examines the sociopolitical context’s conditioning effect on the poverty–conflict nexus. This is achieved by including data on individuals’ perceptions surrounding the quality of their local institutions, the presence of group grievances, and local unemployment rates. These factors, I argue, are more closely linked to reasons for fighting than are common proxies such as night-time luminosity and estimates of economic activity, both of which are often derived from dividing GDP per capita by local population counts.

Poverty—a state in which individuals’ basic needs go unmet—has been shown to motivate people to join rebellions. Humphreys and Weinstein (2008), for instance, found that poverty predicted inscription in the Revolutionary United Front during Sierra Leone’s civil war. Barrett (2011) similarly saw how promises of loot lured the poor to enlist in the 1997– 1998 dispute in Nigeria’s local government area known as Toto. Combatants of the Toto conflict were also more likely to join the rebellion if they stood to gain personal protection, food, and shelter.

For the present study, I developed a dataset by aggregating survey responses from the pan-African Afrobarometer survey to subnational districts and combining the results with information on post-survey violent conflicts. The dataset consists of 4008 subnational districts, spanning 35 African countries. As most districts were only assessed once, thus restricting study of within-unit variation, survey responses were also aggregated to higher-order subnational regions, resulting in a dataset of 111 regions that were surveyed at least twice; this permitted a region-level fixed-effects model design.

Using a pooled cross-sectional dataset of districts, I found that high levels of poverty were linked to increases in local conflict-based violence. Districts with a large share of poor individuals, both in absolute terms and relative to country average, had a higher risk ofconflict than more affluent areas. This relationship held in a coarsened exact matching setup, as well as in a region-level fixed effects design with repeated measurements across time. While the results reveal a local poverty–conflict link, they do not aid in uncovering underlying mechanisms.

Using interactions models, I found that poverty increased the risk of conflict, although only where local institutions are weak. The results also show that poverty-stricken areas in which individuals strongly perceive group injustice have a greater risk of conflict than similarly impoverished regions with no aggrieved population. A departure from the local individual opportunity cost explanation, local economic opportunities do not seem to condition the poverty–conflict nexus. In sum, the results suggest that while poverty is significantly connected to conflict, high-quality institutions and inclusiveness of ethnic groups can prevent violence. Although a wide range of robustness checks and alternative model specifications were implemented, including matching and fixed-effects models, the issue of endogeneity could not be ruled out; doing so would require some kind of exogenous instrument, which I have been unable to identify.

The remainder of this article elaborates on the theoretical framework linking subnational poverty to local conflict-based violence. This is followed by a discussion of existing methods for measuring local poverty and their potential shortcomings. Next presented is the study’s research design and modeling strategy, followed by a discussion of empirical results. The conclusion considers the study’s limitations and proposes avenues for future research on poverty in locations that support rebel groups.

Poverty and conflict

A direct link

A connection between low income and risk of conflict is among the most robust findings in the literature on civil wars (Hegre and Sambanis, 2006). However, there is little consensus on the mechanisms through which poverty may produce conflict. Collier and Hoeffler (1998) claimed that low per-capita income lowers the opportunity cost of rebellion because when they have less to lose from taking up arms, poorer individuals become more inclined to rebel. Fearon and Laitin (2003) observed that poorer countries experience more conflict because they are unable to monitor and control all of their territory, thereby creating pockets of hospitable conditions for insurgents; Tollefsen and Buhaug (2015) identified a similar scenario at the local level.

#### Great power war

Yeisley 11 [(USAF Lieutenant Colonel Mark O. Yeisley, assistant professor of international relations at the School of Advanced Air and Space Studies, Maxwell AFB, Alabama. MA Colorado State, PhD in international relations from Duke University) “Bipolarity, Proxy Wars, and the Rise of China,” Strategic Studies Quarterly, Winter 2011, <https://www.jstor.org/stable/26270538?seq=1#metadata_info_tab_contents>] TDI

Bipolarity, Nuclear Weapons, and Sino-US Proxy Conflict in Africa

It is likely China will achieve economic and then military parity with the United States in the next two decades. China currently possesses 240 nuclear warheads and 135 ballistic missiles capable of reaching the United States or its allies; that number of nuclear warheads is estimated to double by the mid 2020s.43 As during the Cold War, a bipolar system in which war between the United States and China is too costly will lead to policy decisions that seek conflict resolution elsewhere.44 But why would China’s rising necessarily lead to geostrategic competition with the United States, and where would this most likely occur? Unlike the Cold War, access to strategic resources rather than ideology would lie at the heart of future US-Sino competition, and the new “great game” will most likely be played in Africa.

Despite Communist Party control of its government, China is not interested in spreading its version of communism and is much more pragmatic in its objectives—securing resources to meet the needs of its citizens and improve their standard of living.45 Some estimates show that China will overtake the United States to become the world’s largest economy by 2015, and rising powers usually take the necessary steps to “ensure markets, materials, and transportation routes.”46 China is the leading global consumer of aluminum, copper, lead, nickel, zinc, tin, and iron ore, and its metal needs now represent more than 25 percent of the world’s total.47 In contrast, from 1970 to 1995, US consumption of all materials, including metals, accounted for one-third of the global total despite representing only 5 percent of the world’s population.48 China is the largest energy consumer, according to the International Energy Agency, surpassing the United States in consumption of oil, coal, and natural gas in 2009.49 As the two largest consumers of both global energy and materials, the United States and China must seek foreign policy prescriptions to fulfill future resource needs. While the United States can alleviate some of its energy needs via bio- or coal-based fuels, hydrogen, or natural gas alternatives, China currently lacks the technological know-how to do so and remains tied to a mainly nonrenewable energy resource base. Since the majority of these needs are nonrenewable, competition of necessity will be zero-sum and will be conducted via all instruments of power.50

Africa is home to a wealth of mineral and energy resources, much of which still remains largely unexploited. Seven African states possess huge endowments of oil, and four of these have equally substantial amounts of natural gas.51 Africa also enjoys large deposits of bauxite (used to make aluminum), copper, lead, nickel, zinc, and iron ore, all of which are imported and highly desired by China. Recent activity serves to prove that China seeks greater access to natural resources in Africa by avidly promoting Chinese development in a large number of African nations. South Africa, the continent’s largest economy, has recently allowed China to help develop its vast mineral wealth; it is China’s number one African source of manganese, iron, and copper.52 Chinese involvement in Africa is not wholly extractive; the continent provides a booming export market for China’s goods and a forum to augment its soft power in the region by offering alternatives to the political and economic baggage that accompanies US foreign aid.53

Of primary interest is open access to Africa’s significant deposits of oil and other energy resources. For example, China has 4,000 military personnel in Sudan to protect its interests in energy and mineral investments there; it also owns 40 percent of the Greater Nile Oil Production Company.54 Estimates indicate that within the next few decades China will obtain 40 percent of its oil and gas supplies from Africa.55 Trade and investment in Africa have also been on the rise; trade has grown more than 10 percent annually in the past decade. Between 2002 and 2004, African exports to China doubled, ranking it third behind the United States and France in trade with the continent. Chinese investment is also growing; more than 700 Chinese business operations across Africa total over $1 billion. Aid and direct economic assistance are increasing as well, and China has forgiven the debt of some 31 African nations.56

Africa is thus a vital foreign interest for the Chinese and must be for the United States; access to its mineral and petroleum wealth is crucial to the survival of each.57 Although the US and Chinese economies are tightly interconnected, the nonrenewable nature of these assets means competition will remain a zero-sum game. Nearly all African states have been independent entities for less than 50 years; consolidating robust domestic state institutions and stable governments remains problematic.58 Studies have shown that weak governments are often prime targets for civil conflicts that prove costly to control.59 Many African nations possess both strategic resources and weak regimes, making them vulnerable to internal conflict and thus valuable candidates for assistance from China or the United States to help settle their domestic grievances. With access to African resources of vital strategic interest to each side, competition could likely occur by proxy via diplomatic, economic, or military assistance to one (or both) of the parties involved.

Realist claims that focusing on third-world issues is misplaced are thus fallacious; war in a future US-China bipolar system remains as costly as it was during the Cold War. Because of the fragile nature of many African regimes, domestic grievances are more prone to result in conflict; US and Chinese strategic interests will dictate an intrusive foreign policy to be both prudent and vital. US-Sino proxy conflicts over control of African resources will likely become necessary if these great powers are to sustain their national security postures, especially in terms of strategic defense.60

The inevitability of pollution in developing countries has been demonstrated by the Environmental Kuznet Curve. The EKC is a hypothesized relationship between indicators of environmental degradation and income per capita. According to the theory, environmental pollution and degradation increase in the early stages of economic growth, get to a peak point, and reverse in such a way that the environment improves at high income levels. This is based on the fact that developing countries desire industrialization and economic growth and tend to consume more cheap energy. There **is also need for developing countries to build roads and rail tracks and develop massive infrastructure to promote economic growth. Such activities that are required at the take-off stage of economic development are substantially energy-intensive.**