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"Just for Me," "Dark and Lovely," and the Lies they Sold Us: Why We Must Confront Workplace White Supremacy, Quantify the Cost of "Beauty" in the Black community, and Promote Racial Health Equity

Jordan M. Fields

Introduction

Saying that it is hard to live as a Black woman—an individual with intersecting oppressed identities,¹ in America—a country that has tried its very best to cement Black people as second-class citizens,² is an understatement. Every aspect of our existence, from the way we wear our hair, to the length of the nails on our fingers, has been politicized and labeled "inappropriate," "ghetto," "unprofessional," or "inferior," among other things, by non-Black people in ways that enforce whiteness as the socially constructed standard of behavior, beauty, and presentation. Ironically, soon after these culturally significant aspects of our style are mocked and disrespected, they are appropriated by the very same people who aligned Blackness with inferiority. Be it box braids or acrylic nails, Black people and Blackness are the standards of style and beauty in America,

¹ Crenshaw, Kimberle () "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics," University of Chicago Legal Forum: Vol. 1989: Iss. 1, Article 8.

² Hannah-Jones, N., Roper, C., Silverman, I., & Silverstein, J. (2021). The 1619 Project: A New American Origin Story. WH Allen.

despite us being told for centuries that our Blackness is not welcome in certain spaces and ultimately, subordinate to whiteness.

Hair is an extremely important aspect of social and cultural identity for Black people in America. Countless Black women I know can recall early mornings and late nights sitting next to the stove with a hot comb being run through their hair, "runs" to the beauty supply, or for some of us, the dreadful burn we knew was to come from chemical straightening products branded "Just for Me" and "Dark and Lovely." Some of us were called "tender-headed," while others still have scars on their ears from an accidental hot comb burn. Almost all of us have some sort of "hair memory," or experience that shaped the relationship we developed with our hair through adolescence and early adulthood.

These hair memories and early childhood experiences taught us how to take care of ourselves. However, they did not always prepare us to exist in a country where socially constructed beauty standards, school dress codes, and workplace grooming policies declared our hair "unruly," "inappropriate," and "unprofessional." These messages were part of a larger set of beliefs that reinforced whiteness and Eurocentric physical features as the beauty standard in America, causing many Black women to believe they needed to alter their appearance to fulfill an idea of beauty that was rooted in lies. It is my sincere hope that we now understand how harmful this messaging was, and re-construct our understanding of beauty in a way that does not center or prioritize whiteness. As this paper will demonstrate, the implications of maintaining the status quo, white supremacy, could be grave for Black women in particular.

"Just For Me," "Dark and Lovely," and the Cost of Black Beauty

My work experience, which includes co-writing the City of Pittsburgh's C.R.O.W.N. Act, and my lived experience as a Black woman, inform my understanding of how racial identity, employment opportunity, and health policy intersect. As such, I was disappointed, but not surprised when a 2022 report authored by the National Institute of Health (NIH) revealed that individuals who use chemical hair straightening products, including relaxers, might be at increased risk for uterine cancer,³ for which Black women have the highest mortality rate.⁴ Not only did the report state that these hair products might contain chemicals with carcinogenic properties, but it identified evidence of an association between hair straightening chemicals and uterine cancer. Because the authors identified Black women as potentially being at higher risk given their use of these products, I, like many Black women, became understandably alarmed. Yet again, we had been put in a position where our health was at risk, and we would have to rely on a medical system whose origins are rooted in our abuse and death, to develop a remedy or solution.⁵

³ Chang, C.-J., O'Brien, K. M., Keil, A. P., Gaston, S. A., Jackson, C. L., Sandler, D. P., & White, A. J. (2022, October 17). Use of Straighteners and Other Hair Products and Incident Uterine Cancer. Academic.oup.com. Retrieved February 16, 2023, from https://academic.oup.com/jnci/article/114/12/1636/6759686?login=true

⁴ Rabin, Roni Caryn. "Uterine Cancer Is on the Rise, Especially Among Black Women." The New York Times, The New York Times, 18 June 2022, www.nytimes.com/2022/06/17/health/uterine-cancer-black-women.html.

⁵ Holland, B. (2018, December 4). The 'Father of Modern Gynecology' Performed Shocking Experiments on Enslaved Women. History.com. Retrieved February 13, 2023, from https://www.history.com/news/the-father-of-modern-gynecology-performed-shocking-experiments-on-slaves

What I found particularly deceiving about the beauty industry's role in creating this outcome was how these chemicals were marketed to Black communities. The brands that sold these products, named "Just for Me" and "Dark and Lovely," were used to convey empowering messages about beauty to Black women, but conveniently hid the truth about the cost of the beauty they were selling. For some Black women, using chemical hair straighteners every month was easier than having to wash and style their natural hair every week, while others just liked the look of straight hair. Regardless, countless Black people relied on these products as part of their beauty routines without knowing and understanding that the use of these hair products might put our health and well-being at risk. Not to mention, Black women already experience reproductive health difficulties in addition to uterine cancer including endometriosis, adenomyosis, childbirth complications, and maternal mortality, to name a few, because the healthcare system consistently ignores our concerns and fails to provide us with proper care.⁶ So, these hair straightening products that were marketed toward our community were not only influencing customers' understanding of what Black "beauty" looked like, but they were also putting us at increased risk for health concerns that were already prevalent and on the rise in our community.⁷

Despite the lies we were told (and sold) about what Black beauty looked like and the pain we had to endure to achieve it, the beauty industry is not solely responsible for these findings of the NIH report. For decades, natural hair (among other aspects of our racial, ethnic, and cultural identities) was used to deny Black people employment opportunities and created the false narrative that Black hair and forms of Black cultural expression were "unprofessional." Innumerable Black people, especially Black women, received this message, and for years, used straightening products to improve their chances of being employed and promoted within the workforce. Although Title VII of the Civil Rights Act of 1964 barred discrimination against certain protected classes (including race) in employment, natural hair discrimination is still practiced by employers today and continues to have a measurable impact on Black women's workplace experiences.⁸

Addressing Workplace White Supremacy Through Public Policy and Health Equity

To this day, Black women are being removed from their places of employment due to their hair, disrupting their ability to work and earn income, and creating environments in which they feel the need to change the way they look to fit in. A 2019 study conducted by the Joy Collective revealed that Black women were reportedly 1.5 times more likely to be sent home from work due to their hair, 3.4 times more likely to be perceived as "unprofessional" because of their hair, and 80% more likely to agree with the statement that they feel the need to manipulate their hair from its natural state to fit in in the office.

⁶ Woods Bennett, Joy. "Sprinters Tori Bowie and Allyson Felix Symbolize Health Crisis for Black Mothers." Andscape, Andscape, 22 Aug. 2023, andscape.com/features/sprinters-tori-bowie-and-allyson-felix-symbolize-health-crisis-for-black-mothers/.

⁷ Rabin, Roni Caryn. "Uterine Cancer Is on the Rise, Especially Among Black Women." The New York Times, The New York Times, 18 June 2022, www.nytimes.com/2022/06/17/health/uterine-cancer-black-women.html.

⁸ CROWN Act Research Studies. The Official CROWN Act. (n.d.). Retrieved February 12, 2023, from https://www.thecrownact.com/

Conclusively, the 2022 NIH report revealed that society's expectations of Black women are costly. While the NIH's findings may impact hundreds of thousands of Black folks across the nation, I urge us to push back when people call these results a "coincidence." This report is yet another example of racist public policy of the past coming to haunt us in the present day. While grooming policies and natural hair discrimination are believed to be practices of the past, this act of white supremacy exists in the present and will likely continue to exist in the future. Consequently, health, labor, and employment policy must seek to minimize the disparate harm affecting Black women, and provide reparations for those that have already been harmed. A comprehensive racial health equity effort must be made to increase Black women's understanding of the threat these chemicals pose to their health, and to identify individuals who might have developed uterine cancer as a result of their use of chemical hair straighteners.

So, what does a "solution" look like to an ongoing public policy failure? In my opinion, this effort consists of three parts. First, redress must be provided to individuals that can demonstrate that hair straightening chemicals caused their health complications. While an acknowledgment of wrongdoing from chemical hair straightening manufacturers is imperative, it is not sufficient compensation for the undermining of Black women's physical health. Second, public health officials, lawmakers, and medical professionals must organize proactive uterine cancer screenings in Black communities given the frequency with which we use these products. Annual OB-GYN checkups should include the mention of this NIH report, and encourage Black people to get screened for uterine cancer at the appropriate age. Lastly, and arguably most important, the United States (U.S.) Congress must establish marketing and advertising regulations for these products through improved labeling and advertising. If people do not know or fully understand the risk they are assuming when using chemical hair straighteners, I struggle to understand how anyone can place blame on them for ending up in harm's way. "Just for Me" and "Dark and Lovely" are deceptive brand names that do not make clear the harm their products can cause users. Furthermore, they have told a lie to Black communities for decades that have not only undermined our health but our understanding of our beauty.

Efforts have been made in the past to improve product labeling and advertising in the name of public health. In 1965, Congress passed the Federal Cigarette Labeling and Advertising Act to establish a set of national standards for cigarette packaging. ⁹ This piece of legislation was the result of an effort to keep the public abreast of the adverse health effects of cigarette smoking and allow them to make informed decisions about whether or not they would use cigarettes. ¹⁰ It required manufacturers, packagers, and importers to place one of four statutorily prescribed warning statements on cigarette packages and in advertisements. ¹¹ A similar effort should be made regarding chemical hair straighteners, requiring manufacturers and packagers to explicitly state the possible negative health effects that may come from the use of these products.

⁹ Federal cigarette labeling and advertising act. Federal Trade Commission. (2016, August 1). Retrieved March 1, 2023, from https://www.ftc.gov/legal-library/browse/statutes/federal-cigarette-labeling-advertising-act

¹⁰ Federal Cigarette Labeling and Advertising Act. The Association of Centers for the Study of Congress. (n.d.). Retrieved March 1, 2023, from http://acsc.lib.udel.edu/exhibits/show/legislation/cigarette-labeling

¹¹ Federal cigarette labeling and advertising act. Federal Trade Commission. (2016, August 1). Retrieved March 1, 2023, from https://www.ftc.gov/legal-library/browse/statutes/federal-cigarette-labeling-advertising-act

America has historically allowed Black people to assume health risks, such as environmental racism, ¹² and grotesque medical experiments like those conducted on Tuskegee airmen¹³ and the enslaved women that were experimented on by J. Marion Sims, ¹⁴ without so much as informing us of the harm coming our way. Our bodies have been used as test subjects and treated as disposable—as if our health is not the difference between life and death. Now that we are aware of yet another public health problem that may disparately harm Black women, it is our duty to develop potentially life-savings solutions through culturally competent medical and health care, and public policy. We cannot afford to wait until we see a dramatic uptick in uterine cancer diagnoses to begin addressing a possible public health threat we are already aware of. Policymakers, public health officials, and medical professionals must engage in a comprehensive nationwide health equity effort to improve health outcomes for Black women, and save lives.

¹² Adisa-Farrar, T. (2023, February 19). How 600 years of environmental violence is still harming black communities. Earthjustice. Retrieved March 10, 2023, from https://earthjustice.org/article/overlooked-connections-between-black-injustice-and-environmentalism

¹³ Heller, J. (1972, July 26). Syphilis victims in U.S. study went untreated for 40 years. The New York Times. Retrieved March 1, 2023, from https://www.nytimes.com/1972/07/26/archives/syphilis-victims-in-us-study-went-untreated-for-40-years-syphilis.html

¹⁴ Holland, B. (2018, December 4). The 'Father of Modern Gynecology' Performed Shocking Experiments on Enslaved Women. History.com. Retrieved February 13, 2023, from https://www.history.com/news/the-father-of-modern-gynecology-performed-shocking-experiments-on-slaves

Russia's Invasion of Ukraine

Grasping an elusive magnificence and might that have necessitated pernicious effects to Ukrainians and to the rest of the world

Ludovica Bindi, J Geiman, and Kent Rodriguez

I. Introduction

Putin's invasion of Ukraine is an attempt to fulfill his dream of recreating the antiquated Imperialist Russia, however his decision affected not just Ukraine, but the entire international political system. The invasion has prompted unprecedented economic sanctions to Russia and military support for Ukraine from the European Union (EU) and United States of America (US). The invasion has further impacted the foreign stance of key actors such as China and India and their relations with the EU and the US. The actions of these leaders will reverberate for generations to come and seem to be marking the end of globalization.

II. Analysis

Ukraine - Russia Pre-War Dynamics

Ukraine and Russia have deep cultural, economic, and political bonds that have intertwined them for thousands of years.

In 1783, Catherine the Great annexed the Crimean Peninsula following Imperial Russia's victory in the wars that they raged with the Ottoman Empire, this consequently led to securing access to the strategically important Black Sea, present day southern Ukraine. During this period in history, Russia successfully controlled the majority of Ukrainian land.

¹ McLean, John. "History of Western Civilization II." Catherine the Great's Foreign Policies | History of Western Civilization II. Accessed April 1, 2023. https://courses.lumenlearning.com/suny-hccc-worldhistory2/chapter/france-under-louis-xv/#:~:text=Catherine%20annexed%20the%20 Crimea%20in,first%20war%20against%20the%20Turks.

Ukraine was officially incorporated into the Soviet Union in 1922. Stalin's grip on power proved to be disastrous for Ukraine. Stalin orchestrated the Holodomor or the Ukrainian famine and great purge in his thrust to assert more control over the country. As if Ukraine could not get enough suffering, Nazi Germany invaded the country which consequently led to World War II. During this period of depravity and atrocity, Ukraine lost almost 11 million people.

To promulgate the narrative of "eternal friendship", Nikita Khrushchev, former premier of the Soviet Union, lifted the annexation of Crimea and transferred it back to Ukraine in 1954. This action left a distaste in the international scene, ergo its limited attention since both Crimea and Ukraine were still within the Soviet Union borders despite the push for the aforementioned narrative. The Ukrainian concerted effort to support and rally the parliament declaration of independence has been the outcry for years. Finally, in a 1991 national referendum, Ukraine's independence was ratified that marked its official independence from Russia. The impending collapse of the Soviet Union, which was partly accelerated by the Chernobyl nuclear power station fiasco, made Ukraine's independence possible.

Internal political turmoil between two separate constituencies within Ukraine proved to be a catalyst to Russia's annexation plan. A more nationalist, Ukrainian-speaking population in the Western parts supported integration with the EU, while mostly Russian-speaking population in the Eastern-parts favored closer relations with Russia. The juxtaposed ideologies led to the ousting of the Pro-Russian President Viktor Yanukovych, and the uncertainty of impending civil war cost Ukraine its accession bid into the North Atlantic Treaty Organization (NATO). With the turmoil as a backdrop, President Vladimir Putin leveraged the situation to progress his plan of Crimea's annexation which was done through a covert invasion. In March 2014, Putin successfully annexed Crimea.

Vladimir Putin's Rise Into Tsarist-Like Power

With the economic downturn as a backdrop, Putin concentrated efforts in exploiting Russian nationalism as indoctrination of reclaiming its once superpower status.

In 1975, Vladimir Putin graduated Law at Leningrad University, his mentor during his scholastic pursuit was Anatoly Sobchak who later became the leading reform politician of the perestroika period⁸ and who would become a very important figure in his rise to power. During the same year Putin would join the Committee for State Security, commonly known as the KGB. ⁹ Academics would argue that this period in Putin's life proved to be formative since it taught him how to effectively build and maintain a network of powerful political allies¹⁰ which he will continue to depend on for the years to come.

² Ibid.

³ Masters, Jonathan. "Ukraine: Conflict at the Crossroads of Europe and Russia." Council on Foreign Relations. Council on Foreign Relations, February 14, 2023. https://www.cfr.org/backgrounder/ukraine-conflict-crossroads-europe-and-russia.

⁴ Ibid.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

^{8 &}quot;Vladimir Putin." Encyclopædia Britannica. Encyclopædia Britannica, inc., March 31, 2023. https://www.britannica.com/biography/Vladimir-Putin.

⁹ Ibid.

¹⁰ Pavgi, Kedar. "Russia's 'New Tsar': Putin's Reign in a New Chapter in a Very Old Book." Political Science Database. John Hopkins University Press, 2015. https://www.proquest.com/.

Following in his mentor's footsteps, Putin was appointed in 1994 as the First Deputy Mayor of Anatoly Sobchak which ironically was the first democratically elected mayor of St. Petersburg.

Putin moved to Moscow in 1996 where he joined the presidential staff as Deputy to Pavel Borodin, the Kremlin's Chief Administrator and subsequently appointed in 1998 by President Boris Yeltsin as Director of the Federal Security Service. 11

In 1999, Putin was appointed as Prime Minister and designated as Acting President upon the incumbent's resignation. With just a decade into his political career, Putin had shifted from bureaucrat into a full pledge politician while deliberately maneuvering influence and authority among the political elites. One noteworthy theory of the reason why President Boris Yeltsin chose Putin as his successor is his trustworthiness. The latter displayed this when he facilitated Anatoly Sobhak's illegal exit from Russia into another country without due regard to the possible repercussions to his reputation and career. This gesture permeated Yeltsin's need for trusted individuals considering his forthcoming departure which was heavily determined by his fear for punishment vis-a-vis his family's corrupt practices.

During his first term as President in 2000, Putin generated the objective of providing stability to the country that direly needed it.¹⁴ Being extremely briefed of the debacle of the perestroika reform, Putin asserted to move a different course for its economic reform. Putin exerted the idea of national champions and rationalized Russia's energy assets and consequently purged companies that were run by private owners.¹⁵

Putin's second term as President was in 2004 in which he institutionalized another unique aspect of the Russian system. Putin promoted the practice of senior government officials to have control over major Russian companies. ¹⁶ By 2008, he was required to step down as President due to the constitutional provision that limits the number of Presidential terms to only two. Putin decided to choose Dmitry Medvedev as his successor. Since he was no longer the President, he was appointed as Chairman of the United Russia Party and Prime Minister. ¹⁷ Albeit Medvedev was the President, it was a Kremlin public knowledge that Putin held the power ergo made important decisions.

The third term in 2012 was not a smooth sailing for Putin. For the first time, the public's opinion of him was seen as an all-time low. Anti-Putin protests took place during and directly after the presidential campaign. Backed with fierce military troops, Putin was successful in its efforts to stifle the protests. Putin ordered the opposition leader's imprisonment and labeled nongovernmental organizations that received funding abroad as foreign agents. 19

¹¹ Ibid.

¹² Pavgi, "Russia's 'New Tsar': Putin's Reign in a New Chapter in a Very Old Book."

¹³ Kirk, Michael. "Gleb Pavlovsky." PBS. Public Broadcasting Service, July 13, 2017. https://www.pbs.org/wgbh/frontline/interview/gleb-pavlovsky/#highlight-922-932.

¹⁴ Pavgi, Kedar. "Russia's 'New Tsar': Putin's Reign in a New Chapter in a Very Old Book." Political Science Database. John Hopkins University Press, 2015. https://www.proquest.com/.

¹⁵ Dresen, F. Joseph. "Petrostate: Putin, Power, and the New Russia." Wilson Center. Kennan Institute. Accessed April 1, 2023. https://www.wilsoncenter.org/publication/petrostate-putin-power-and-the-new-russia.

¹⁶ Ibid

^{17 &}quot;Vladimir Putin." Encyclopædia Britannica. Encyclopædia Britannica, inc., March 31, 2023. https://www.britannica.com/biography/Vladimir-Putin.

¹⁸ Ibid.

¹⁹ Ibid.

In 2018, Putin was reelected as President for the fourth time. Putin managed to implement his own concept of democracy with the nomenclature "managed democracy". Putin's concept was seen to have the foundational structures and procedures of a democratic government, but the outcome of an election was largely predetermined by him.²⁰ By this time, Putin ultimately wielded his power when he barred the face of the opposition, Aleksey Navalny, from running and ran incessant criticisms of the Communist candidate, Pavel Grudinin, from state-run media.²¹

Cost of the War

The zero-sum game of a war holds mightily to people that are directly affected - one casualty is indeed one too many, the added environmental damage wreaks further havoc to the already traumatized people.

According to a report from the United Nations Human Rights Office, from February 2022 until February 2023, the total confirmed civilians killed in Ukraine is 8,006 (granular data shows that among them are 3,533 men; 2,096 women; 456 children; and 1,921 is still unknown). There are more than 13,000 people injured and more than 100,000 troops that are either wounded or killed. The total number of people driven out from their dwellings are estimated to be around 13.5 million (granular data shows 5.2 million sought refuge from other European and central Asian countries, 1.6 million in Poland, over 880,000 in Germany, and nearly 2.9 million in Russia while 5.4 million decided to return/stay in Ukraine). On the other hand, Russia's toll is among its troops with an estimated 200,000 that are either wounded or killed.

The devastation of the war perceived not just through the human but also though an environmental lens must be underscored. The conflict has ruined vast swaths of farmland, burned down forests, and destroyed national parks. Damage to industrial facilities has caused heavy air, water, and soil pollution, exposing residents to toxic chemicals and contaminated water. To quantify all of these, the estimated environmental damage has cost Ukraine over \$51 billion (granular data shows \$27 billion in air pollution, \$23.1 billion in waste, \$1.6 billion in water resources, and \$0.3 billion in soil). With how the war is unfolding, it is obvious that the longer it continues the more innocent people will suffer and the more irreversible damage it will cost the environment.

²⁰ Ibid.

²¹ Ibid.

²² Keaten, Jamey. "The Calculus of War: Tallying Ukraine Toll an Elusive Task." AP NEWS. Associated Press, February 24, 2023. https://apnews.com/article/russia-ukraine-war-numbers-8768880034d9d7cd6ac6f3e34abd66f5.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Guillot, Louise, Antonia Zimmermann, and Giovanna Coi. "The Environmental Scars of Russia's War in Ukraine." POLITICO. POLITICO, February 22, 2023. https://www.politico.eu/article/environment-scars-russia-war-ukraine-climate-crisis/#:~:text=The%20conflict%20has%20ruined%20vast,toxic%20chemicals%20and%20contaminated%20water.

²⁷ Ibid.

²⁸ Ibid.

Economic Response

Overview of Sanctions

One of the key tools Western actors have attempted to leverage against Russia are economic sanctions. It is widely understood that direct EU or US military intervention in the war would be inadvisable, given hesitancy to provoke greater conflict in the region including potential nuclear escalation. Economic restrictions, however, can be quicker to implement and involve no loss of life for the countries implementing sanctions.

RUSSIA-UKRAINE WAR

Which countries have sanctioned Russia?

At least 46 countries or territories have imposed sanctions on Russia, or pledged to adopt a combination of US and EU sanctions. Since February 22, more than 10,901 sanctions have been imposed on Russia, making it the most sanctioned country in the world.

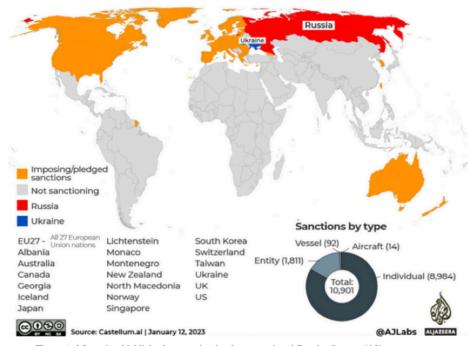


Figure 1. Maps that highlight the countries that have sanctioned Russia. Source: Al Jazeera.

Sanctions packages have come in multiple waves since Russia's initial invasion in early 2022, including a large surge of sanctions soon after the invasion and another package released in February 2023 on the anniversary of the war. As of March 2023, the US, EU, and other allies including Japan, Australia, and the United Kingdom have blocked \$58 billion USD worth of sanctioned Russian oligarchs' assets²⁹ and \$300 billion of Russian state-owned assets.³⁰ This accounts

²⁹ "Joint Statement from the REPO Task Force," US Department of the Treasury, https://home.treasury.gov/news/press-releases/jy1329

^{30 &}quot;Effectiveness of US Sanctions Targeting Russian Companies and Individuals," Free Russia Foundation, 2023, https://www.4freerussia.org/effectiveness-of-u-s-sanctions-targeting-russian-companies-and-individuals/

for approximately 50 percent of Russia's international foreign exchange reserves, according to Russian Minister of Finance Anton Siluanov.31

In addition to freezing Russian assets, Western allies have been successful in restricting Russian entities' access to the SWIFT network.³² This financial telecommunications system facilitates international banking transfers; blocking Russian banks from participating in this system was intended to introduce barriers to transferring funds, either to support the war effort directly or to move money from international accounts to avoid sanctions. 33

In total, the sanctions currently leveraged against Russia have contributed to making it the most sanctioned country in the world, with at least 46 countries implementing or promising sanctions against a total of 8,984 individuals and 1,811 entities including banks and other financial and political institutions.³⁴ Notably, Australia, New Zealand, Japan, South Korea, Taiwan, and Singapore are the only countries in the Global South that have implemented sanctions.

The sanctions implemented in response to the 2022 invasion of Ukraine stand out from previous sanctions leveraged against Russia in that they are specifically designed to "[cripple] the Russian economy and financial system." While sanctions have been in place against Russia for decades, including in response to the 2014 annexation of Crimea, never have sanctions been designed to collapse the economy of an entire nation.

Western actors also seek to test the limits of international law with a proposal to expropriate frozen Russian state assets to directly finance support for Ukraine.³⁶ While there is no existing precedent for this, if successful, such a move could have wide-ranging implications for the future of sanctions and international economic leverage.

Technology and Equipment Sanctions

In developing the economic response to the invasion, Western actors targeted specific sectors in order to most effectively cripple the Russian war effort and the economy as a whole. One major target has been the technology sector. Russia is not a major technological producer, and relies on significant imports of computers and components, machinery, and vehicles--which comprised the top three imports in and accounted for more than 40 percent of the total value of Russian imports in 2021.³⁷ These technologies are critical to Russia's war effort in Ukraine, which has made particular use of unmanned aerial vehicles (UAVs),

^{31 &}quot;Russia Lost Access to Half Its Reserves, Finance Minister Says," Bloomberg, https://www. bloomberg.com/news/articles/2022-03-13/russia-lost-access-to-half-its-reserves-finance-ministersays#xj4y7vzkg

^{32 &}quot;For the Russian banks banned from SWIFT, are there any options left?", Euronews, https://www. euronews.com/my-europe/2022/08/03/for-the-russian-banks-banned-from-swift-are-there-any-options-left

^{33 &}quot;Ukraine conflict: What is Swift and why is banning Russia so significant?", BBC News, https:// www.bbc.com/news/business-60521822

^{34 &}quot;Europe leaps towards energy autonomy as sanctions undercut Russia," Al Jazeera, https://www.aljazeera.com/news/2023/2/28/europe-leaps-towards-energy-autonomy-as-sanctions-un-

^{35 &}quot;Global Sanctions Dashboard: Special Russia edition," Atlantic Council, https://www.atlanticcouncil.org/blogs/econographics/global-sanctions-dashboard-special-russia-edition/

^{36 &}quot;Proposals to Seize Russian Assets to Rebuild Ukraine," Brookings Institution, https://www.brookings.edu/research/proposals-to-seize-russian-assets-to-rebuild-ukraine/

^{37 &}quot;Russia's Top 10 Imports," World's Top Exports, https://www.worldstopexports.com/russias-top-10imports/

or drones, to conduct reconnaissance, deliver supplies, and conduct attacks on Ukrainian forces and civilians.

Since the invasion began, the US and EU have blocked all technology, components, and software exports to Russia, aiming to block the Russian military's effectiveness. However, Russia has largely been able to get around the impact of these sanctions by sourcing these technologies from alternative trading partners including China, Turkey, Kazakhstan, and the United Arab Emirates. In fact, Russia was able to import more microchips in particular in 2022 as compared with 2021, logging a reported increase of \$630 million USD in import value despite Western sanctions. China has remained a key partner in this sector, particularly in supplying semiconductors and UAVs.

Oil and Gas Sanctions

A second major target of Western sanctions has been Russia's energy sector. Russia is rich in natural resources, including oil and natural gas, gems and precious metals, iron and steel, minerals, and timber. Of these resources, oil and natural gas form the bulk of Russia's economic power, with the value of oil exports alone accounting for 11 percent of GDP⁴² in 2021.

European (OECD) countries collectively, including EU members, were the majority recipients of both Russian oil and natural gas exports before the invasion. Exports to OECD Europe and the EU accounted for nearly 50 percent of oil and gas exports and about two thirds of natural gas exports in 2021.⁴³ In contrast, the US imported only negligible proportions of Russian oil and gas-which made US policymakers' decision to completely cut off Russian energy imports an easier and more financially viable decision.

^{38 &}quot;The Role of Technology Sanctions in Crippling Russia's War Machine," International Institute for Sustainable Development, https://www.iisd.org/articles/policy-analysis/technology-sanctions-russia-war

^{39 &}quot;Russia Is Getting Around Sanctions to Secure Supply of Key Chips for War," Bloomberg, https://www.bloomberg.com/news/articles/2023-03-04/putin-gets-military-tech-chips-semiconductors-despite-eu-and-g-7-sanctions#xj4y7vzkg

⁴⁰ Ukrinform. "Despite Sanctions, Russia Increases Microchip Imports in 2022 - Media." Ukrinform, Укринформ, 31 Jan. 2023, www.ukrinform.net/rubric-economy/3662705-despite-sanctions-russia-increases-microchip-imports-in-2022-media.html.

^{41 &}quot;Ribakova, Elina, et al. "Effectiveness of U.S. Sanctions Targeting Russian Companies And..." Free Russia Foundation, 1 Nov. 2023, www.4freerussia.org/effectiveness-of-u-s-sanctions-targeting-russian-companies-and-individuals/.

⁴² Houser, Trevor. "US Policy Options to Reduce Russian Energy Dependence." Rhodium Group, 16 Mar. 2022, rhg.com/research/us-policy-russia-energy-dependence/.

^{43 &}quot;Russia Matters." By the Numbers: Where Do Russia's Energy Exports Go? | Russia Matters, 5 Dec. 2023, www.russiamatters.org/blog/numbers-where-do-russias-energy-exports-go.

Russia's exports of natural gas (trillion cubic feet), 2021

Russia's total gas exports, 2021: 8.9 trillion cubic feet

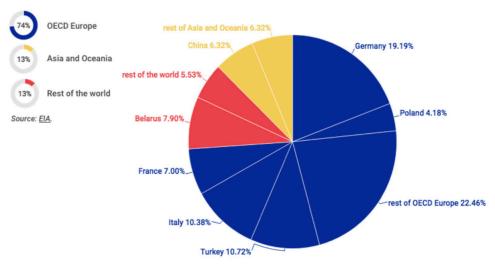


Figure 2. Russia's exports of natural gas in 2021. Source: Russia Matters

Russia's exports of crude oil and condensate (million barrels per day), 2021

Russia's total crude oil and condensate exports, 2021: 4.7 million barrels per day

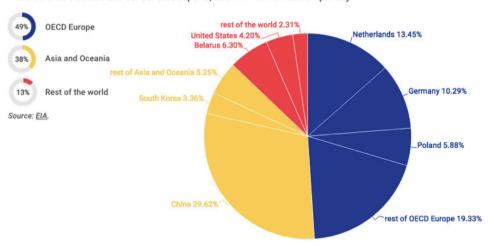


Figure 3. Russia's exports of crude oil in 2021. Source: Russia Matters

The EU, on the other hand, was incredibly reliant on Russian energy. In an ideal scenario, this dependence would have gone both ways--if the EU successfully cut off Russian energy imports, it would cripple the Russian economy through the loss of a major proportion of its export partners.

While the US was quick to cut off imports of Russian oil, natural gas, and coal, in March 2022, ⁴⁴ the EU took a more gradual approach due to concerns about a potential energy crisis caused by immediately cutting off Russian energy. In December 2022, the EU implemented a partial ban on Russian crude oil imports, fully banning imports via seaports but exempting pipeline imports. This partial ban was the result of a compromise with Central and South-Eastern European countries including Hungary, Czechia, and Slovakia, which were particularly dependent on oil imports through the Druzhba Pipeline. ⁴⁵ Simultaneously, G7 countries--which include Canada, France, Germany, Italy, Japan, the United Kingdom, US, and EU--announced a price cap on Russian oil set at \$60 USD/barrel. ⁴⁶ While not an outright ban, the price cap was intended to reduce the shock to markets that a full ban might cause, while limiting Russia's ability to profit from its oil exports. ⁴⁷

Finally, as of February 2023, the EU has implemented a full ban on Russian crude and refined oil imports. ⁴⁸ This has been achieved by a major effort within the EU to pivot to alternative sources as well as increased energy independence, particularly led by Germany. ⁴⁹

Impact on the Russian Economy

The scale of Western sanctions' impact on the Russian economy is hard to determine, particularly as the Central Bank of Russia has stopped releasing detailed trade data since the start of the invasion. The full impact of energy sanctions, in particular, remains to be seen: because of the EU's slow adoption of broad energy sanctions, only about 8 percent of the value of Russian oil exports was under sanction in 2022, though this is set to increase considerably in 2023 following the latest sanctions package. However, from the indicators for which there is reliable data, it is evident that sanctions have not had the effect of crippling the Russian economy that Western allies hoped they would.

Russian GDP, for example, did decline considerably in 2022 as Western allies implemented wide-ranging sanctions packages, decreasing by between 2.2 to 3.9 percent from 2021 to 2022 by different estimations. However, the forecast for 2023 varies considerably. Some estimates, such as the OECD, project Russian GDP to fall an additional 5.6 percent from its 2022 level, while the IMF predicts GDP will increase by 0.3 percent. The Russian ruble has also remained resilient,

^{44 &}quot;Background Press Call by a Senior Administration Official on Announcement of U.S. Ban on Imports of Russian Oil, Liquefied Natural Gas, and Coal." The White House, The United States Government, 8 Mar. 2022, www.whitehouse.gov/briefing-room/press-briefings/2022/03/08/background-press-call-on-announcement-of-u-s-han-on-imports-of-russian-oil-liquefied-natural-gas-and-coal/.

⁴⁵ Cahill, Ben. "European Union Imposes Partial Ban on Russian Oil." CSIS, 8 June 2022, www.csis. org/analysis/european-union-imposes-partial-ban-russian-oil.

^{46 &}quot;Ukraine War: G7 and Allies Approve Cap on Price of Russian Oil." BBC News, BBC, 2 Dec. 2022, www.bbc.com/news/world-europe-63840412.

⁴⁷ Rascoe, Ayesha, and Jackie Northam. "The EU Is Cutting off Imports of Russian Oil Products." NPR, NPR, 5 Feb. 2023, www.npr.org/2023/02/05/1154581999/the-eu-is-cutting-off-imports-of-russian-oil-products.

^{48 &}quot;Europe bans Russian oil products, the latest strike on the Kremlin war chest," NPR, https://www.npr.org/2023/02/03/1153833640/europe-russian-oil-products-ban

 $^{49\} Schultheis, Emily.\ ``Europe\ Is\ Learning\ to\ Live\ without\ Russian\ Energy.''\ Foreign\ Policy,\ 21\ Dec.\ 2022,\ foreignpolicy.com/2022/12/21/europe-russia-energy-climate-change-policy-renewable/.$

⁵⁰ Taran, Svitlana. "Strengthening the Impact of EU Sanctions against Russian Aggression in Ukraine." Strengthening the Impact of EU Sanctions against Russian Aggression In, 27 Oct. 2022, www.epc.eu/en/publications/Strengthening-the-impact-of-EU-sanctions-against-Russian-aggression-in-~4hele8

and even reached its highest value in seven years in June 2022.⁵¹ While its value subsequently decreased, it has now generally equalized to pre-invasion levels.⁵²

Russia's GDP - evolution from 2018 to 2023

(base 100 in 2018)

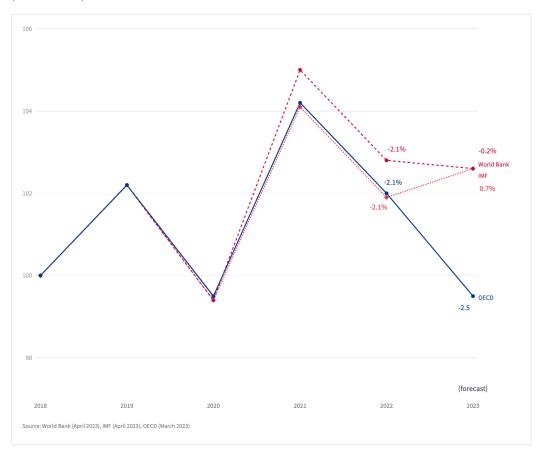


Figure 4. Russia's GDP from 2018 to 2021, with IMF, World Bank, and OECD predictions for 2022 and 2023.

Much of Russia's resilience can be attributed to its strengthening relationship with China. Russian trade with China increased 34.3 percent in 2022 to cross the 1 trillion yuan mark for the first time.⁵³ In 2022, China was also the destination for 20 percent of Russia's exports and the source of 35 percent of imports to Russia.54

⁵¹ Turak, Natasha. "Russia's Ruble Hit Its Strongest Level in 7 Years despite Massive Sanctions. Here's Why." CNBC, CNBC, 23 June 2022, www.cnbc.com/2022/06/23/russias-ruble-is-at-strongest-level-in-7-years-despite-sanctions.html.

^{52 &}quot;Russian Rublequote - Chart - Historical Data - News." Russian Ruble - Quote - Chart - Historical Data - News, tradingeconomics.com/russia/currency. Accessed 1 Apr. 2023.

^{53 &}quot;China-Russia Trade Rises 34.3% to \$190 Billion in 2022, a New Record High." Global Times, 13 Jan. 2023, www.globaltimes.cn/page/202301/1283761.shtml.

^{54 &}quot;Ukraine War: What Support Is China Giving Russia?" BBC News, BBC, 20 Mar. 2023, www.bbc.

Russia's growing trade with China

in US\$bn

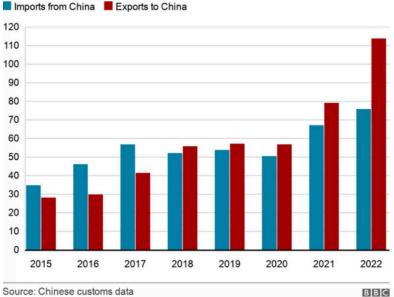


Figure 5. Russia's growing trade with China. Source: BBC

Russian oil imports by India and China

Oil imported, million barrels-per-day

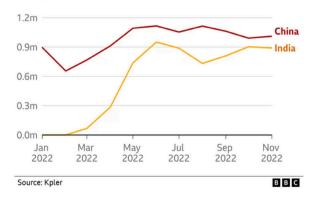


Figure 6. Russia's oil imports to India and China. Source: BBC

China has been a particularly critical partner for Russian energy exports, especially as the EU divests from Russian oil. China is Russia's top export destination, followed closely by India; these countries are also the top two recipients of Russian oil and gas exports.⁵⁵ India, in particular, has benefited from discounted Russian oil prices as a result of the G7 price cap. The increase in oil exports

com/news/60571253.

⁵⁵ Menon, Shruti. "Ukraine Crisis: Who Is Buying Russian Oil and Gas?" BBC News, BBC, 23 May 2023, www.bbc.com/news/world-asia-india-60783874.

to Asia has allowed Russia to largely make up for the loss in export revenue to the EU as a result of Western sanctions. Following the completion of the planned "Power of Siberia 2" pipeline, which will connect Russia, Mongolia, and China, China may increase its consumption of Russian oil even further.

Long-Term Impacts

The long-term impacts of Western sanctions on the Russian war effort and economy more broadly remain to be seen, particularly as both Russia and the EU pivot away from one another in the energy sector. Given the large financial reserves of Putin himself and his political supporters, as well as Russia's so-far-successful ability to turn to alternative partners to maintain its trade economy, it seems doubtful that Western sanctions will significantly impede the war effort in Ukraine. Instead, sanctions are more likely to slow long-term economic growth within Russia--which ultimately has the greatest impact on Russian citizens rather than Putin and his supporters who instigated the war.

We should also expect to see continued and increased economic reliance on Asia, particularly as trading partners for oil and natural gas. This may bolster Russia's economy if it is able to continue to replace lost EU export revenues with exports to China, India, and other countries, while simultaneously making Russia more vulnerable to fluctuations in demand in these countries.

Political International Reactions

While for Ukrainians the war is a fight for their own freedom and sovereignty, the rest of the world has displayed interest in this war that can be seen as going above and beyond supporting this legitimate reason, including pursuing their own objectives. This can be seen in the response of the EU, US, India, and China to the war.

European Union

According to the US Congressional Research Service, ⁵⁶ the EU response has been clear in supporting both the Ukrainian military and population (following data is up till March 2023): EU institutions have committed €3.6 billion in military assistance, both for lethal (€3.1 billion) and nonlethal (€380 million) equipment. The estimated bilateral support for military purposes from member states is over €8 billion; EU institutions and its member states have collectively gathered funds for financial, humanitarian and emergency assistance for a total of €37.8 billion, which include both favorable loans and grants.⁵⁷

Reasons behind this support are clearly indicated by the High Representative of the European Union for Foreign Affairs and Security Policy, Josep Borrell Fontelles, in his analysis published by the think-tank Groupe d'études géopolitiques.⁵⁸ According to him, Europe is not willing to be a "bystander in a world shaped by and for others", especially if such changes are happening right

⁵⁶ Archick, Kristin. "Russia's War against Ukraine: European Union Responses and U.S. EU ..." Congressional Research Service, 20 Nov. 2023, crsreports.congress.gov/product/pdf/IN/IN11897.

^{57 &}quot;EU assistance to Ukraine," European Commission, accessed April 9, 2023, https://eu-solidaritv-ukraine.ec.europa.eu/eu-assistance-ukraine en

⁵⁸ Fontelles, Joseph. "Europe in the Interregnum: Our Geopolitical Awakening after Ukraine." Groupe d'études Géopolitiques, 24 Mar. 2022, geopolitique.eu/en/2022/03/24/europe-in-the-interregnum-our-geopolitical-awakening-after-ukraine/.

outside its borders: the EU is seeing the war as a chance to reaffirm its stance as a global player and become an hard power. This "geopolitical awakening" is due to the realization that the world has not ended with the end of Cold War and the beginning of the age of democracy: an EU that doesn't realize that the world is in the "age of power politics" is naïve. But the most important reason behind EU's intervention, as described by Borrell, is that while being attack on a sovereign nation, it is the biggest direct threat to Europe's security since World War II and it challenges the principles the world order and international relations are built on.

This last sentiment of insecurity and fear of possible escalation is especially felt in those countries who have known hardships under the Soviet rule during WWII and the Cold War. This can be seen in how much each country has provided to Ukraine compared to their GDP: the Baltic countries and Poland lead the group of highest contributors as can be seen in figure 5.⁵⁹ They fear that a winning Russia could attack them next, and, for Polish citizens, their empathy is also due to closed cultural and linguistic ties with Ukrainians.⁶⁰

Total bilateral commitment as percentage of GDP Top and sample countries

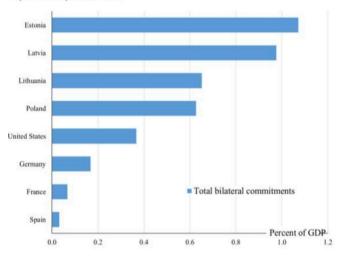


Figure 7. Example of countries' total contributions as percentage of their GDP. Source: Kiel Institute for the World Economy.

United States

The White House declares that in the first year of the war the US government has supported Ukraine with actions that include: ⁶¹Security assistance for \$29.8 billion, including lethal weapons such as mortar systems and tanks. ⁶²

⁵⁹ Arianna Antezza et al., "Ukraine Support Tracker Data," Kiel Institute for the World Economy, April 2023, https://www.ifw-kiel.de/publications/data-sets/ukraine-support-tracker-data-17410/60 Jamie Dettmer, "Central Europe warns against a second 'Munich betrayal'," POLITICO, February 17, 2023, https://www.politico.eu/article/central-europe-warn-second-munich-betrayal-mateusz-morawiecki-war-ukraine-munich-security-conference/

⁶¹ The White House, "FACT SHEET: One Year of Supporting Ukraine," February 21, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/02/21/fact-sheet-one-year-of-supporting-ukraine//

⁶² U.S. Department of Defense, "Fact Sheet on U.S. Security Assistance to Ukraine," February 20, 2023, https://media.defense.gov/2023/Feb/20/2003164184/-1/-1/0/UKRAINE-FACT-SHEET-PDA-32.PDF

- To address the humanitarian crisis, the US has provided \$1.9 billion to secure food, water, and shelter for the Ukrainians in need. Moreover, the government has granted \$340 million in refugee assistance to its European partners that have sheltered Ukrainian refugees.
- The US has contributed \$220 million to support media outlets operations and democratic institutions.
- The US has already distributed \$13 billion in grants for budget support and will distribute the \$9.9 billions recently approved by Congress. These funds are to ensure the Ukrainian government meets the needs of and provide basic services to its citizens.

The interests that the US has in Ukraine are determined by its geopolitical stand and military and economic relations with its partners.

First, Russia's actions are a direct threat to the rule-based world order, as said by President Biden. 63 This world order has been sponsored by the US and its allies since after World War II,64 and supporting Ukraine means keeping the peace generated by this order. 65 Moreover, Russia's invasion is an affront to democratic, self-determination and human rights principles. 66 A Russia win after a blatant attack on a sovereign nation could set a precedent for other autocratic regimes to follow as in the case for China and Taiwan: that is why defeating Russia now means deterring other aggressive actors later.⁶⁷ Secondly, Russia, other than being a major nuclear threat to the US since it has the largest nuclear stockpile in the world, 68 is a threat to the EU and NATO allies because of their geographical proximity with Russia. The EU is one of the US largest trading partners:⁶⁹ an unstable Europe would mean a loss for the US economy. If Russia were to win this war, then NATO allies would have an emboldened and aggressive state at their backdoor:70 If the Russia were to further escalate the conflict and attack other NATO members, that would require the US and NATO allies to participate in the conflict because of the collective defense agreement between NATO member states. And that would mean World War III as pointed out by President Biden.⁷¹

⁶³ The White House, "Remarks by President Biden on the United Efforts of the Free World to Support the People of Ukraine," March 26, 2022, https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/03/26/remarks-by-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-president-biden-on-the-president-biden-on-the-president-biden-on-the-president-biden-on-the-president-biden-on-the-president-biden-on-the-president-bidenpeople-of-ukraine/

⁶⁴ Jeffrey Cimmino and Matthew Kroenig, Strategic context: The rules-based international system, Atlantic Council Strategy Paper Series (Washington, DC: Atlantic Council, 2020), https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/strategic-context-the-rules-based-inter-definition of the council of thenational-system//

⁶⁶ Johan Hassel et al., Why the United States Must Stay the Course on Ukraine (Washington, DC: Center for American Progress, 2023), https://www.americanprogress.org/article/why-the-united-statesmust-stay-the-course-on-ukraine/

⁶⁷ Ibid; Raphael S. Cohen and Gian Gentile, "Support to Ukraine Continues to Be for America First," RAND Blog, February 15, 2023, https://www.rand.org/blog/2023/02/support-to-ukraine-continuesto-be-for-america-first.html

⁶⁸ Hans M. Kristensen, Matt Korda, and Eliana Reynolds, Status of World Nuclear Forces (Washington, DC: Federation of American Scientists, n.d.), https://fas.org/issues/nuclear-weapons/status-world-nu-

⁶⁹ Cohen and Gentile, "Support to Ukraine Continues to Be for America First."

⁷⁰ Hassel et al., Why the United States Must Stay the Course on Ukraine.

⁷¹ Brett Samuels, "Biden: Direct conflict between NATO and Russia would be 'World War III'," The Hill, March 11, 2022, https://thehill.com/policy/international/597842-biden-direct-conflict-betweennato-and-russia-would-be-world-war-iii/

China

China's stance on the war is not as clear-cut as for the EU and the US. While the Chinese government hasn't openly provided weapons to Russia and has claimed that it has no intention to do so, 72 there seems to be evidence that some Chinese companies have supplied hi-tech products that could be used for military purposes such as civilian drones, and electronic components for anti-air-craft missile radars. 73 At the same time, China's top diplomat, Mr. Wang Yi, has expressed that his government is critical of the EU providing weapons to Ukraine. 74

Now, after a year of war, China wants to broker peace: it has published a twelve-point document that propose a way to bring a political settlement for the Ukraine "Crisis". Even if it asks for the respect of the sovereignty of all countries, it doesn't recognize that Ukraine's sovereignty is the one endangered by Russia's actions. Moreover, it blames the NATO's expansion as the reason behind the conflict, thus aligning the Chinese government position with the Kremlin. 16

This diplomatic alignment of China with Russia is due to the benefits that China would receive if the US-led world order would be undermined by a Russian win in Ukraine. The Moreover, the political instability that can rise in Russia if the country were to be defeated would constitute a security threat to China because this instability would spread and destabilize Central Asia and thus the western borders of China, causing the country to be surrounded by problematic situations (China already has disputes over islands with its eastern neighbors). And it is this fear of instability that is making the Chinese government wanting to broker peace since, after a year of battles, Russia is not winning. Other reasons for the Chinese government to believe that peace is the best course of action include not alienating EU countries, key trading partners, and reaching out to all those non-western actors that have been harmed by the negative consequences of the war on the world economy, especially in terms of energy and food security.

China's stance can be summarized as one of walking a "tightrope":⁸¹ if on one side Russia is an important ally because of ideologically anti-West positions and shared desires of a multi-polar world that both countries share, Chinese biggest trading partners, the US, and the EU, have explicitly said that if

⁷² Tessa Wong, "China and the Ukraine war: The real reason for Beijing's charm offensive," BBC News, February 24, 2023, https://www.bbc.com/news/world-asia-china-64754510

⁷³ BBC Reality Check, "Ukraine war: What support is China giving Russia?" BBC News, March 20, 2023, https://www.bbc.com/news/60571253

⁷⁴ Wong, "China and the Ukraine war: The real reason for Beijing's charm offensive."

⁷⁵ Ministry of Foreign Affairs of the People's Republic of China, China's Position on the Political Settlement of the Ukraine Crisis (Beijing, China: Ministry of Foreign Affairs of the People's Republic of China, 2023), https://libguides.nps.edu/citation/chicago-nb#gov-report-strategy

⁷⁶ Stuart Lau, "Xi, Putin back 'peace talks' for Ukraine war – but blame NATO and make no offer to withdraw," POLITICO, March 21, 2023, https://www.politico.eu/article/xi-jinping-vladimir-putin-back-peace-talks-ukraine-war-blame-nato-no-offer-withdraw-china-russia/

⁷⁷ Charlie Campbell, "Why China, Russia's Biggest Backer, Now Says It Wants to Broker Peace in Ukraine," Time, February 22, 2023, https://time.com/6257398/china-russia-ukraine-war-peace-talks/78 Ibid; Yu Jie, "Brokering peace in Ukraine would be good for Xi and China: is he adroit enough to pull it off?" The Guardian, March 24, 2023, https://www.theguardian.com/commentisfree/2023/mar/24/ukraine-xi-jinping-china-putin-zelenskiy-eu

⁷⁹ Campbell, "Why China, Russia's Biggest Backer, Now Says It Wants to Broker Peace in Ukraine." 80 Jie, "Brokering peace in Ukraine would be good for Xi and China: is he adroit enough to pull it off?" 81 Holly Ellyatt, "Nothing comes for free: What China hopes to gain in return for helping Russia," CNBC, March 21, 2023, https://www.cnbc.com/2023/03/21/what-does-china-want-from-russia-if-it-helps-it-with-ukraine.html

Chinese military support to Russia would have significant consequences on bilateral relations.⁸²

India

India's position on the war as been described as one of "studied public neutrality toward Russia". The Indian government hasn't taken a stand on who is to be deemed responsible for the war in Ukraine: not Russia as the US and the EU, nor NATO as China has done. It sofficial position has focused on the humanitarian crisis, 5 for example by providing medicines to Ukraine and calling for humanitarian relief in the country at the UN, 6 while Prime Minister Modi has tried to discuss the issue with Putin via private conversations. Ukraine and this position shows an inconsistency in India's global stance: if on one side the country is committed to defending the rules-based order in the Indo-Pacific, it fails to keep the position when this order is not maintained in Europe.

While this position seems inconsistent with Indian values, it is dictated by very pragmatic calculations: India is not interested in the integrity of the world order but in preserving its own security in Asia by not alienating Russia. 89 First, India's neutrality towards Russia's actions is intended to preserve the relationship with Kremlin and prevent it from increasing ties with China and Pakistan, which are much more immediate and enduring threats to India. 90 But is unclear whether this position will deliver its desired outcomes given the increasing economic dependencies on China that Russia has developed after the start of the war as previously discussed in section d. Furthermore, it is uncertain whether the impacts of sanction and of the war will enable Russia in the future to be a powerful ally for India in Asia. 91 Second, while this position upsets the United States, India doesn't see this as a reason for Washington to not help India in counterbalancing China in Asia: the US would be an ally for India in this because of its own "sheer interests" in seeing China's world influence diminish. 92 And the Biden administration understand India's position and it is willing to not hold India accountable for it. 93 Thus, ensuring Russia's alliance with neutrality gives more chances to India to gain support for its own issues.

⁸² Kelly Garrity, "Jake Sullivan: Aiding Russia would be a 'bad mistake' for China," POLITICO, February 26, 2023, https://www.politico.com/news/2023/02/26/sullivan-russia-china-ukraine-00084453; Stuart Lau, "Von der Leyen warns Xi not to arm Russia with Chinese weapons," POLITICO, April 6, 2023, https://www.politico.eu/article/ursula-von-der-leyen-warn-xi-jinping-not-arm-russia-chinese-weapons-china/

⁸³ Åshley J. Tellis, "What Is in Our Interest": India and the Ukraine War (Washington, DC: Carnegie Endowment for International Peace, 2022), https://carnegieendowment.org/2022/04/25/what-is-in-our-interest-india-and-ukraine-war-pub-86961

⁸⁴ Ibid.

⁸⁵ Ibid

 $^{86\,^\}circ$ l'India hands over 12th consignment of humanitarian aid to Ukraine," The Economic Times, September $12,\,2022,\,https://economictimes.indiatimes.com/news/india/india-hands-over-<math display="inline">12th$ -consignment-of-humanitarian-aid-to-ukraine/printarticle/94158286.cms

⁸⁷ Stuart Lau and Saim Saeed, "India's Modi tells Putin: This is 'not the era for war'," POLITICO, September 16, 2022, https://www.politico.eu/article/narendra-modi-tells-vladimir-putin-war-has-no-place-in-todays-era/

⁸⁸ Tellis, "What Is in Our Interest": India and the Ukraine War

⁸⁹ Ibid

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² Tellis, "What Is in Our Interest": India and the Ukraine War

⁹³ Lauren Frayer, "A year into the Ukraine war, the world's biggest democracy still won't condemn Russia," NPR, February 20, 2023, https://www.npr.org/2023/02/20/1156478956/russia-india-relations-oil-modi-putin

Other reasons behind India's position are also based on strong historical ties that go back to the Cold War, the need for India to buy cheap gas for its own economic development, and the fact that Russia is the biggest arms dealer to India.⁹⁴

Conclusion

Russia's invasion of Ukraine has accelerated a shift of the economic world order into a bipolar model with a growing divide between East and West. Putin's unpredictability and the absolute power he wields over Russia will continue to create uncertainty as to the outcomes of the war and the region.

One of the few impacts that is certain is the human cost of the war: the people of Ukraine continue to fight for their freedom and sovereignty, not for the interests of global world powers, and pay the cost in human life and millions of people displaced.

94 Ibid.

Environmental Policy in the United States and Abroad

Matthew Wu, Michael Rodriguez, Nouman Ahmed, Ryan Shen

Abstract

The past six decades, the world has formalized a recognition of human-driven environmental impacts through environmental policy. However, because environmental impacts are not equally distributed and preventing negative environmental consequences requires iterative improvement, environmental justice remains an elusive outcome. While environmental policy can be achieved for a range of ends, environmental justice requires an approach that questions which stakeholders' benefit, particularly amid 21st-century globalization, where environmental consequences may be invisible to the perpetrators. This paper will first discuss a history of American Environmental and Energy Policy before moving into American attempts at Environmental Justice both prior to and after the 21st century. This paper will conclude with an examination of environmental justice on a global scale, with an examination of how procedural justice through international law has been slow to take form.

I. History of Environmental and Energy Policy

Most of the United States' environmental policy progress has occurred in the latter portion of its existence. The Federal Water Pollution Control Act of 1948 is arguably the first major piece of legislation passed to address growing environmental concerns. Since then, the history of U.S. environmental law has experienced slow growth, with some spurts of significant progress and some rollbacks of environmental regulations.

Water Regulation

The Federal Water Pollution Control Act was designed to reduce water pollution and prevent water pollution that would put the health of Americans at risk. The Act was ineffective in reducing water pollution and was very hard to enforce. The Water Quality Act of 1965 took stronger measures in pursuit of these

¹ Powers, Ann. "Federal Water Pollution Control Act (1948)." In Major Acts of Congress. Encyclopedia.com. Last modified May 4, 2023. https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/federal-water-pollution-control-act-1948.

goals, requiring every state to issue water quality standards. These standards were eventually adopted in every state by 1970.² The 1972 Clean Water Act consisted of sweeping amendments to the Water Quality Act. This legislation funded the construction of new sewage treatment plants, created a framework for regulation of pollutant discharges into U.S. waters, criminalized releasing pollutants into waters without a permit, and allowed the EPA to implement water pollution control programs. The Clean Water Act was expanded upon multiple times, such as the 1977 Clean Water Act amendments and the 1987 Water Quality Act.³

The Clean Water Act and its amendments have generally led to decreased water pollution. One study examined the effect using the common water quality metric of how much water is safe for fishing. Figure 1 shows how the proportion of U.S. waters that were unfishable has significantly decreased from 1972, when the Clean Water Act was first enacted, to 2014.⁴

US Surface Water Pollution, 1972-2014

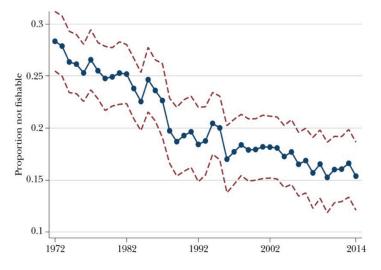


Figure 1: US Surface Water Pollution, 1972-2014 (Journal of Economic Perspectives)

Air Pollution Regulation

The Air Pollution Control Act (1955) was the first major United States federal law to address air pollution. However, it only funded research into air pollution, with no regulatory measures. The 1963 Clean Air Act was the first federal legislation allowing the U.S. government to regulate air pollution. The 1967 Air Quality Act allowed the federal government to regulate interstate air pollution transport and monitor air pollution emissions. The Clean Air Act of 1970, like the Clean Water Act of the same year, greatly expanded the scope of

² Encyclopedia.com. "Environmental Issues: Essential Primary Sources." Accessed April 18, 2023. https://www.encyclopedia.com/environment/energy-government-and-defense-magazines/water-quality-act-1965.

³ Environmental Protection Agency. "History of the Clean Water Act." Last modified July 6, 2022. https://www.epa.gov/laws-regulations/history-clean-water-act.

⁴ Keiser, D. A., and J. S. Shapiro. 2019. "US Water Pollution Regulation Over the Past Half Century: Burning Waters to Crystal Springs?" Journal of Economic Perspectives 33, no. 4: 51–75. https://doi.org/10.1257/jep.33.4.51.

the environmental legislation and became the framework that was built upon in subsequent amendments. It developed a set of emission regulations, applying to both mobile and industrial sources of emissions. Industrial sources of emissions were regulated through the National Ambient Air Quality Standards (NAAQS), State Implementation Plans (SIPs), New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAPs). The Clean Air Act was amended in 1977, with its most notable provisions regarding the Prevention of Significant Deterioration (PSD) of air quality and nonattainment areas with respect to the National Ambient Air Quality Standards. It was again amended in 1990, significantly bolstering the federal government's authority in regulating air quality. This amendment created new regulatory programs for controlling acid deposition (acid rain) and for issuing stationary operating permits.5

The Clean Air Act and its subsequent amendments have resulted in a significant reduction of emissions. From 1990 to 2014, the emissions of key pollutants in the United States have decreased: Carbon Monoxide (CO) by 67%, Ammonia (NH3) by 22%, Nitrogen Oxides (NOx) by 59%, and Sulfur Dioxide (SO2) by 88%. Figure 2 shows these declining emissions.

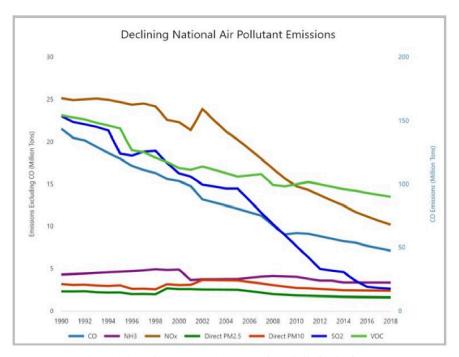


Figure 2: Declining National Air Pollutant Emissions (U.S. EPA Air Quality Systems, 2018)

Hazardous Waste Disposal and Resource Conservation Regulations

The Solid Waste Disposal Act of 1965 was the first federal law to improve waste disposal. It provided states a framework to control solid waste disposal and

⁵ Environmental Protection Agency. "Evolution of the Clean Air Act." Last modified November 28, 2022. https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act.

⁶ Environmental Protection Agency. "Overview of the Clean Air Act and Air Pollution." Last modified August 10, 2022. https://www.epa.gov/clean-air-act-overview.

set landfill safety requirements.⁷ The Resource Conservation and Recovery Act (RCRA) of 1976 amended the Solid Waste Disposal Act and became the primary law regulating the disposal of solid and hazardous waste in the United States. The goal of the RCRA was to conserve energy and natural resources, reduce waste, and protect people and the environment from hazardous waste disposal. It accomplished these goals through a set of three programs. The Solid Waste Program incentivized states to create waste management plans for the disposal of nonhazardous solid waste. The Hazardous Waste Program created a system to control the handling of hazardous waste from generation to disposal. Lastly, the Underground Storage Tank Program would regulate underground storage of hazardous substances and petroleum products.⁸

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), was passed. CERCLA, often referred to as Superfund, established a tax on chemical and petroleum companies that was used to fund cleanup of hazardous waste sites. It also allowed the federal government to take action in response to the potential release of substances hazardous to people or the environment. The parties releasing hazardous waste would face liability for the damages. In 1990, the Oil Pollution Act (OPA) was passed to reduce and clean up oil spills. Similar to CERCLA, the OPA used a tax on oil companies to fund the cleanup of oil spills when the responsible party is unwilling or unable to do so. The law also included standards and regulations for oil storage facilities. In

Federal Agencies and Environmental Protection

The Environmental Protection Agency (EPA) enforces many of these regulations. The EPA was founded in 1970 under President Nixon and it sets and enforces environmental laws and pollution control standards. Its goals include the determination of the effectiveness of current and proposed environmental laws, pursuit of clean air, land and water, promotion of environmentally conscious decisions in U.S. policy, and holding contaminating or polluting parties responsible. The EPA achieves these goals through research and development, pollution prevention programs, enforcement (such as fines and sanctions), and grants to environmentally conscious projects and organizations.¹¹

Much of the U.S. government's efforts to fight climate change are enacted through its energy policy. The Department of Energy was created in 1977 under the Jimmy Carter administration. It promotes clean energy adoption through financial incentives, such as tax incentives for renewable energy, and renewable portfolio standards. A renewable portfolio standard is a state or local mandate for the minimum percentage of energy generated that must come from renewable energy resources.¹²

⁷ Encyclopedia.com. "Solid Waste Disposal Act (1965)." In Major Acts of Congress. Accessed April 18, 2023. https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/solid-waste-disposal-act-1965.

⁸ Environmental Protection Agency. "EPA History: Resource Conservation and Recovery Act." Last modified June 27, 2022. https://www.epa.gov/history/epa-history-resource-conservation-and-recovery-act.

⁹ Environmental Protection Agency. "Superfund: CERCLA Overview." Last modified January 24, 2023. https://www.epa.gov/superfund/superfund-cercla-overview.

¹⁰ Environmental Protection Agency. "Summary of the Oil Pollution Act." Last modified September 12, 2022. https://www.epa.gov/laws-regulations/summary-oil-pollution-act.

¹¹ Environmental Protection Agency. "Our Mission and What We Do." Last modified June 13, 2022. https://www.epa.gov/aboutepa/our-mission-and-what-we-do.

¹² Energy.gov. "Mission." Accessed April 18, 2023. https://www.energy.gov/mission.

President Obama's 2015 Clean Power Plan was the first set of limits placed on carbon emissions from U.S. power plants. The goal was to have carbon dioxide emissions 32% lower than its 2005 levels by 2030. This plan required states to meet carbon emission reduction standards and would provide incentives for states to meet reduction standards early.¹³ This plan, however, was repealed by the Environmental Protection Agency under the Trump Administration in 2019. In its place was the Affordable Clean Energy Rule, which was a significant reduction in the Clean Power Plan's emissions reduction standards.¹⁴

II. The Legacy of Measures for U.S. Environmental Justice Developed Prior to the 21st Century

Introduction

In 1962, Rachel Carson published Silent Spring, which criticized indiscriminate pesticide use as a carcinogen and harbinger of ecocide. Three years later, Ralph Nader published Unsafe at Any Speed, which castigated the use of red dyes in food colorings and nitrate preservatives for the same reasons.

The Environmental Movement at the Intersection of Race and Labor

While both Rachel Carson and Ralph Nader are celebrated as consumer advocates and powerful environmental activists, environmental justice also got its momentum through a series of working-class protests in the latter half of the decade. In 1967, Cesar Chavez formed the United Farm Workers union to protest how insecticide use on grape farms was affecting immigrant laborers, who rarely had the bargaining power to argue for better conditions, well before pesticides affected consumers. ¹⁷ One year later, the Memphis Sanitation Strike also argued that marginalized African American workers' poor compensation and inferior local job prospects compromised their position to argue for more environmentally sound working conditions within the local sanitation department in addition to better living conditions nearby treatment plants. ¹⁸

The National Environmental Policy Act's Provision for Evaluating Environmental Impacts

In 1969, the National Environmental Policy Act required that all federal agencies prepare an environmental assessment (EA) or an environmental impact statement for every federal proposal that could have a major impact on the environment. ¹⁹ Environmental assessments precede environmental impact statements,

¹³ Malloy, Allie, and Sunlen Serfaty. "Obama Unveils Major Climate Change Proposal." CNN. Cable News Network, August 3, 2015. https://www.cnn.com/2015/08/02/politics/obama-climate-change-plan/index.html.

¹⁴ Irfan, Umair. "Trump's EPA Just Replaced Obama's Signature Climate Policy with a Much Weaker Rule." Vox. Vox, June 19, 2019. https://www.vox.com/2019/6/19/18684054/climate-change-clean-power-plan-repeal-affordable-emissions.

¹⁵ Britannica. "Silent Spring | Work by Carson." April 18, 2023. https://www.britannica.com/topic/Silent-Spring.

¹⁶ Digital History. Digital History. Accessed May 4, 2023. https://www.digitalhistory.uh.edu/disp_textbook.cfm?smtid=2&psid=3351.

 $^{17\,}$ Pawel, Miriam. The Crusades of Cesar Chavez: A Biography. First U.S. edition, Bloomsbury Press, 2014.

¹⁸ Stanford University, et al. "Memphis Sanitation Workers' Strike." The Martin Luther King, Jr., Research and Education Institute. Last modified June 2, 2017. https://kinginstitute.stanford.edu/encyclopedia/memphis-sanitation-workers-strike.

¹⁹ US EPA, OP. "National Environmental Policy Act Review Process." Last modified July 31, 2013.

requiring that agencies only need to provide a statement of purpose and a need for proposed action. If NEPA's adjudicator, the EPA, recognizes serious risks to fragile habitats or potential violations of the protections granted under the Clean Air and Clean Water Acts, then agencies will be mandated to provide an environmental impact assessment.

However, environmental impact statements have more stringent criteria, mandating that agencies also provide an analysis of the project's aesthetic, social and economic impacts in addition to a recognition of how the project might impact cultural or historical sights. Those criteria have tremendous impacts which stand at the heart of NEPA's controversy. The EIS is meant to be a document for decision-makers among federal, county, and local decision makers.

Therefore, opportunities for representatives from the public to voice their opinions and add addendums exist. However, soliciting comments through environmental impact statements can radically increase the length of the document. According to the Heritage Foundation, the average time to complete a NEPA assessment for transportation projects increased from 2.2 years to 6.6 years in 2011. Similarly, Senator Dan Sullivan, an Alaskan Republican, castigated NEPA during the Inflation Reduction Act's negotiations, stating that only a handful of leftist extremists would "love the fact that it takes nine to ten years to build a bridge in the USA". Additionally, because each agency has different standards for enforcing EISs, enforcement can be opaque and unpredictable. The Council of Environmental Quality was created with the intention of facilitating differences between agency enforcement while also ensuring that EIS stipulations are not in violation of more than 20 regional and state laws. 1

That being said, less than 1% of projects require environmental impact statements, and of the projects which require EISs, the average completion time is 5 years. ²² The majority of projects are exempted from NEPA assessments through categorical exclusions, whose conditions vary by agency involved. ²³ Of the projects which required environmental impact statements, the Natural Resources Defense Council has credited NEPA for preventing thousands of acres of clear cutting across the American Rockies, preventing the storage of biological hazards 13 miles away from the Bronx, reduced road construction that interfered with residential quality of life, and created windows for ecological restoration across a range of residential and large scale utility projects. ²⁴ Every state has a success story tied to NEPA's process for environmental impact assessments.

NEPA's Shortcomings within Environmental Justice

However, even though NEPA was the closest approximation the United States had to realizing environmental justice for much of the 20th century, the

https://www.epa.gov/nepa/national-environmental-policy-act-review-process. ``What Is an Environmental Impact Statement?''

²⁰ PBS NewsHour. "In Surprise Vote, Senate to Overturn Biden Environmental Rule." August 4, 2022. https://www.pbs.org/newshour/politics/in-surprise-vote-senate-to-overturn-biden-environmental-rule. 21 Patnaik, Rayan Sud, and Sanjay. "How Does Permitting for Clean Energy Infrastructure Work?" Brookings. Last modified September 28, 2022. https://www.brookings.edu/research/how-does-permitting-for-clean-energy-infrastructure-work/.

²² Sierra Club. "Never Eliminate Public Advice: NEPA Success Stories." Natural Resources Defense Council. February 1, 2015. https://www.nrdc.org/resources/never-eliminate-public-advice-nepa-success-stories.

²³ Ibid.

²⁴ Sierra Club. "NEPA Is Under Threat—Here's Why That Matters." Accessed April 18, 2023. https://www.sierraclub.org/sierra/national-environmental-policy-act-nepa.

law's narrow definition of "human environment" contributed to the disproportionate exposure of minority communities to toxic waste, air pollution, and unsafe drinking water. In Metropolitan Edison vs. the People Against Nuclear Energy, the court clarified that the issuance of an environmental impact statement was conditioned upon physical damages to the environment rather than the local community's feelings of depression, powerlessness, or oppression which would preface environmental damages. While the seminal environmental justice protests in the late 1960s documented the environmental consequences of long-existing conditions, protests in the early 1980s not only discussed imminent environmental consequences but also how poor environments compounded psychosocial and economic woes along racial lines. Bean vs. Southwestern Waste Management Corporation barred the construction of a waste facility within 2 miles of 6 low-income public schools. In 1982, Congressman Wilton E Fonroy was arrested for protesting the burial of PCB contaminated soil in a predominantly black, low-income constituency.

Bill Clinton's Recognition of Environmental Justice

In 1994, Bill Clinton signed Executive Order 12898, which voiced a commitment to environmental justice in low income and minority populations across all federal agencies. His administration created the Environmental Justice Small Grants program, which aids the identification of environmental damages in communities that historically don't have the leverage or bandwidth to fight the institutions responsible.

Obstacles to realizing Environmental Justice from Clinton Era Reforms

However, there has still been a racial bias in the realization of environmental outcomes. In 2007, 90% of environmental advocates were non-Hispanic Whites, operating in a space with low pay and high turnover, both of which provide severe opportunity costs for working class advocates who have less access to social safety nets.²⁹ African Americans have approximately 1.54 times more exposure to particulate matter in the air, and about 80% of Non-White Americans worry a great deal about their drinking water.³⁰ Additionally, workforce participation and education, which are key social determinants of health, affect compliance to state controlled disaster efforts where there's little time to cultivate trust, which complicates efforts to mitigate the consequences of environmental disasters after they happen.³¹

²⁵ Jones, Travis D. "Humans Long Ignored: Revisiting NEPA's Definition of 'Human Environment' in the Era of Black Lives Matter." Villanova Environmental Law Journal 32 (2021).

²⁶ US EPA, OEJECR. "Environmental Justice Timeline." Last modified April 15, 2015. https://www.epa.gov/environmentaljustice/environmental-justice-timeline.

²⁷ Herald-Journal - Google News Archive Search. Accessed May 5, 2023. https://news.google.com/newspapers?nid=1876&dat=19820928&id=EoQsAAAAIBAJ&sjid=wM0EAAAAIBAJ&pg=6407,6275 332&hl=en.

²⁸ Environmental Protection Agency. "Grant Award Announcement - Environmental Justice Small Grant Program." August 4, 1994. https://www.epa.gov/archive/epapages/newsroom_archive/newsreleases/2b2b9b38b6b08dbe852564440071765c.html.

²⁹ Natural Resources Defense Council. "The History of Environmental Justice in Five Minutes." May 18, 2016. https://www.nrdc.org/stories/history-environmental-justice-five-minutes.

³⁰ Greenpeace USA. "Fact Sheet: Fossil Fuel Racism Is a Public Health Crisis." Accessed May 5, 2023. https://www.greenpeace.org/usa/campaign-updates/fact-sheet-fossil-fuel-racism-is-a-public-health-crisis/.

³¹ Ulibarri, Nicola, et al. "Barriers and Opportunities to Incorporating Environmental Justice in the National Environmental Policy Act." Environmental Impact Assessment Review 97 (November 2022): 106880. https://doi.org/10.1016/j.eiar.2022.106880.

III. Environmental Justice Today in the US

Even though the recognition of environmental justice was formalized through the federal government under the Clinton administration, the beginning of the 21st century set in motion an overarching theme of inconsistency for the recognized strength that environmental justice deserves. The first large-scale event that took place was George W. Bush's shift in the federal government's focus for environmental justice on environmental harms from "low-income and minority" communities to "all people." This would lead to a lack of structure on policies, programs, and frameworks across the federal government. ³² Under Bush Jr.'s administration, the young formalization of environmental justice began to erode. Many leaders in Congress would make attempts to pass legislation to remedy the administration's lacking support but no progress was made. This would set a weak foundation for the future of environmental justice, as the next administration would be required to make substantial revisions to how environmental justice is recognized in order for there to be progress for vulnerable communities.

Leading up to Obama's administration there would be some hope for the revitalization of environmental justice on the campaign trail. Obama states, "Generally speaking in America, a lot of environmentally problematic facilities tend to be located in places where poor folks live because wealthier folks have the ability to say, not in my backyard." Although progressives in Congress would not be able to pass major environmental legislation, the Obama administration would be able to provide incremental progress. This came in the form of strategic plans around civil rights and environmental justice, established a case manual for investigations, and provided resources for state agencies. The little progress made in the years before 2016 would soon be faced by a president who oversaw the weakening of the EPA and reverted many environmental protections.

Donald Trump made a point to overtly criticize the EPA and led a number of rollbacks on environmental regulations accounting for over 100 rules being reversed by the end of his term. Trump did not support the strength of the EPA and many among his administration's leadership would echo these sentiments. His own environmental prosecutor called environmental justice an overstepping "crusade" by the federal government. This within the first year of Trump's presidency, the head of the Office of Environmental Justice resigned. He will be and communities of color, the Trump administration had a focus on prioritizing other interests before environmental concerns or concerns around environmental justice. With how environmental justice has been acknowledged and tested by the federal government it is equally important to understand how this principle has been handled at the state level. The next sections will cover some examples of the missteps and progress that has been made for environmental justice in different

³² Buford, Talia. "Has the Moment for Environmental Justice Been Lost?" ProPublica, July 24, 2017. https://www.propublica.org/article/has-the-moment-for-environmental-justice-been-lost.

³³ A-Z Quotes. "Barack Obama Quote." Accessed April 14, 2023. https://www.azquotes.com/quote/1568689.

³⁴ Popovich, Nadja, Livia Albeck-Ripka, and Kendra Pierre-Louis. "The Trump Administration Is Reversing Nearly 100 Environmental Rules. Here's the Full List." The New York Times. October 16, 2020, sec. Climate. https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.

³⁵ Ibid.

³⁶ Ibid.

regions in the United States. It is crucial to state that environmental justice was formally recognized at the federal level through the Executive Order 12898, whereas among states there has been a growing number of measures in place to address environmental justice more regionally but also a number of cases where there has been lack of regulations and rules to support communities of color who have been victim to injustice from pollution or toxins.

Regional Setbacks and Failures

Across the following case studies for regional setbacks, there are three themes that arise often: accessibility to clean water and clean air, the harms of pollution, and lack of responsibility by government bodies. These themes will stand out in each case and connect across cases that highlight the devastating impact the lack of support for environmental justice in some states has led to for communities. These key aspects that appear in cases of environmental injustice are important because many opponents to the principle argue that the work done by the EPA with respect to environmental justice should be left to the discretion of states. However, as will be shown in the following regional examples many states are not adequately addressing what lies at the core of environmental justice.

The first case to look at is regarded as a very infamous case of environmental injustice with the city of Flint, Michigan. The city of Flint experienced a crisis of unclean water after the mismanagement of the water supply in 2014. Thousands of residents would be exposed to and complain about high levels of lead exposure from their water due to corrosion in the pipes of homes. However, even with complaints state officials would claim that residents had no risk from their water supplies.³⁷ This denial would cause greater protests among the community accompanied by data from researchers that supported the calls of residents. Among the progress to address the issue, government officials would claim confusion regarding protocols for water management, followed by a declared state of emergency by the mayor and soon after by President Obama.³⁸ In the years that followed, multiple officials would be called on to testify and some even criminally charged. The governor of Michigan was one official who testified and stated that there was a failure of government on all levels including, federal, state, and local. Yet, after an independent investigation it was concluded that from a regulatory standpoint the mismanagement of this crisis lied with the state's officials.³⁹ Adjacent to this crisis was also an observed increase in lead exposure among children in the Detroit area. It is believed that the commotion in Flint caused an increase in parents having their children tested for lead exposure in surrounding areas. It was found that 10 zip codes across Detroit had at least 10% of children under 6 who had elevated levels of lead exposure. 40 Fortunately, Flint now has complied with water regulations for years as of the writing of

³⁷ Kennedy, Merrit. "Lead-Laced Water in Flint: A Step-By-Step Look at the Makings of a Crisis." NPR. April 20, 2016. https://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-lacedwater-in-flint-a-step-by-step-look-at-the-makings-of-a-crisis. 38 Ibid.

³⁹ Kennedy, Merrit. "Independent Investigators: State Officials Mostly to Blame for Flint Water Crisis." NPR.org. Last modified March 23, 2016. https://www.npr.org/sections/thetwo-way/2016/03/23/471585633/independent-investigators-state-officials-mostly-to-blame-for-flint-water-crisis.

⁴⁰ Rochester, Mark J. "Lead Poisoning in Children under 6 Jumped 28% in Detroit in 2016." Detroit Free Press. Last modified November 27, 2017. https://www.freep.com/story/news/2017/11/27/whichmichigan-communities-had-highest-levels-lead-poisoning-children-2016-not-flint/893448001/.

this paper, but attitudes of mistrust with the government remains among the community after experiencing the trauma of the crisis and its period of denial from officials. This is an all-too-common experience for vulnerable communities, and it is shared in the next case that will be examined.

The second case focuses on a strip of land that lies on the Mississippi river in Louisiana that has been given the moniker of "Cancer Alley" for the people who live here experience higher risks of developing cancer. One town in specific, Reserve, is a predominantly African-American town where the risk of cancer is 50 times higher than the national average. 41 Petrochemical plants were found to be responsible and were part of agreements to decrease potentially harmful emissions, yet little was actually done to benefit the surrounding communities. In addition, the EPA had conducted research that supported the reality that residents in this area were disproportionately experiencing environmentally caused harms. Similar to Flint, officials including the state secretary of environmental quality in Louisiana denied the legitimacy of concerns for Cancer Alley residents. 42 Arguments against the calls in Louisiana were based around the claim that no reports had yet stated that the incidence of cancer was not recorded to be higher than the national average. Fortunately, in 2022 Tulane University published research to not only support the claim that cancer incidence rates were higher in this area of the state but also found evidence that poorer neighborhoods experienced higher exposure to toxic air pollution which also was linked to higher cancer rates.⁴³ It is still early to see if this research will impact policy making in this region but it highlights the necessary support that environmental justice requires while there remains some officials who are skeptical of the institutional racism that is present among environmental outcomes for communities.

The third case follows California as there are many anecdotes of children complaining to their parents of inexplicably experiencing headaches, nose bleeds, or fits of nausea when at school. The common factor among these cases is the presence of oil or gas wells in close proximity to the school that they attend.⁴⁴

In 2014, the environmental watchdog group FracTracker Alliance found that there were over 400 wells within 1 mile of a school, over 300,000 students attended a school where a well was within 1 mile of their campus, and 79.6% of students in a 1-mile proximity to a well were non-white. An any of these wells can be polluting the air that children are breathing during their day-to-day activities while at school. Although there is no data as of now that can directly link the effect pollution from these wells has on the health of children, however there is a growing amount of research that points out the harmful impacts of being in close proximity to oil and gas wells. Research from Johns Hopkins found the rates of premature birth among mothers in proximity to fracking wells were higher

⁴¹ The Guardian. "Cancertown Louisiana Reserve Special Report." Last modified May 6, 2019. https://www.theguardian.com/us-news/ng-interactive/2019/may/06/cancertown-louisana-reserve-special-report.

⁴² Ibid.

⁴³ Terrell, Kimberly, and Gianna St. Julien. "Tulane Study: Louisiana's Severe Air Pollution Linked to Dozens of Cancer Cases Each Year | Tulane Law School." law.tulane.edu, January 13, 2022. https://law.tulane.edu/news/tulane-study-louisianas-severe-air-pollution-linked-dozens-cancer-cases-each-year. 44 bmock2014. "Frackers Are Terrorizing School Kids in California." Grist. Last modified November

^{19, 2014.} https://grist.org/climate-energy/frackers-are-terrorizing-school-kids-in-california/.

⁴⁵ Ferrar, Kyle MPH. "Oil & Gas Drilling in CA near Schools." FracTracker Alliance. Last modified November 18, 2014. https://www.fractracker.org/2014/11/caschooldemos_stimswells_ej/.

than those who were farther. 46 Additionally, the University of Chicago discovered negative infant health outcomes were linked to mothers living close to fracking sites. 47 The lack of limits in California for how close oil and gas wells can be to places such as schools, homes, and medical facilities exemplifies the attitude the government has taken for not taking on the responsibility of respecting the health and environmental justice for its large communities of color across the state.



Image 1. Fracking well near California school. (FracTracker Alliance 2018)

The final case will focus on Allegheny County in the state of Pennsylvania. The county includes the city of Pittsburgh, that ranks among the worst places to live with asthma⁴⁸ and in 2020 a study found that many students in the area suffered from asthma due to pollution. 49 The issue of air quality in the county is not new as the county has a large history of industrial polluters being present in the area. For example, the U.S. Steel Clairton Coke Works was found to have violated various air quality regulations due to its harmful emissions.⁵⁰ Advocacy groups in the county argue not much has been done to keep polluting facilities in check because of a lack of real penalties. A plethora of research has been conducted in the area regarding the conditions of residents and the impact pollution has had on their health. The state of Pennsylvania has also been proactive enough to outline what areas should be considered environmental justice communities; they

⁴⁶ Johns Hopkins University. "Study: Fracking Industry Wells Associated with Premature Birth." Last modified October 8, 2015. https://publichealth.jhu.edu/2015/study-fracking-industry-wells-associated-with-premature-birth.

⁴⁷ Currie, Janet, Michael Greenstone, and Katherine Meckel. "Hydraulic Fracturing and Infant Health: New Evidence from Pennsylvania." Science Advances 3, no. 12 (December 2017): e1603021. https://doi.org/10.1126/sciadv.1603021.

⁴⁸ Asthma & Allergy Foundation of America. "Asthma Capitals." Accessed April 18, 2023. https:// aafa.org/asthma-allergy-research/our-research/asthma-capitals/.

⁴⁹ Marusic, Kristina. "Environmental Injustice in Pittsburgh: Poor, Minority Neighborhoods See Higher Rates of Deaths from Air Pollution." EHN. Last modified June 12, 2020. https://www.ehn.org/ environmental-injustice-pittsburgh-air-pollution-2646169635.html.

⁵⁰ Forstadt, Jillian. "Allegheny County Levies \$307K in Fines on U.S. Steel for Clairton Air Pollution Violations." 90.5 WESA. Last modified March 16, 2023. https://www.wesa.fm/environment-energy/2023-03-16/allegheny-county-levees-307k-in-fines-on-u-s-steel-for-clairton-air-pollution-violations.

are census tracts where at least 20 percent of residents live in poverty and/or 30 percent or more of the population identify as a racial minority. With this in mind the University of Pittsburgh used data about the area to support the finding that the most polluted census tracts are often in poor or minority communities. Members of the county's Committee on Health and Human Services are looking to advocate for stricter regulations for pollution in the area, hopefully the EPA will accept this advice and move forward with actionable changes. Sa

Regional Achievements and Progress

Moving on to cases of regional achievements in environmental justice, there are four points that will be shared by each example: a growth in legislation, the importance of local advocacy, formalization of policy/plans, and the renewed federal recognition of environmental justice. These points will show the increasing measures that are occurring across states to support environmental justice. These key examples provide models for how states can effectively help communities that are facing the disproportionate impact from environmentally harmful facilities or practices. The following examples are just the beginning of the necessary progress that should be made but highlights the important feature that environmental justice initiatives are feasible.

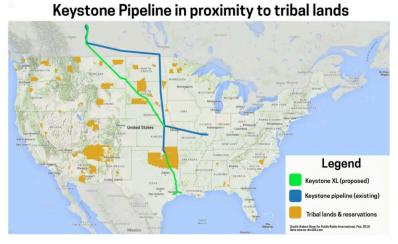


Image 2. Proposed pipeline cutting through tribal lands (Boos 2015)

Firstly, within the first year of the Biden administration it appeared that environmental justice would be prioritized once again. The first single of this came in the form of an executive order that included the measure of blocking the construction of the Keystone XL pipeline. This proposed oil pipeline was said to cut through parts of the country that was reserved for Indigenous com-

⁵¹ Pennsylvania Department of Environmental Protection. "PA Environmental Justice Areas." Accessed April 18, 2023. https://www.dep.pa.gov/PublicParticipation/OfficeofEnvironmentalJustice/Pages/PA-Environmental-Justice-Areas.aspx.

⁵² Fabisiak, James P., Erica M. Jackson, LuAnn L. Brink, and Albert A. Presto. "A Risk-Based Model to Assess Environmental Justice and Coronary Heart Disease Burden from Traffic-Related Air Pollutants." Environmental Health 19, no. 1 (March 16, 2020). https://doi.org/10.1186/s12940-020-00584-z. 53 Guay, Jessica. "Allegheny County Council Urging EPA to Lower Soot Pollution Standards." CBS News Pittsburgh. Last modified March 22, 2023. https://www.cbsnews.com/pittsburgh/news/allegheny-county-council-epa-lower-soot-pollution-standards/.

munities. These communities brought up protests and calls that if this pipeline were to be built and some disaster occurred it could harm the environment around where they live.54

The Biden administration has recognized the importance of the potential harms from climate change. In addition, the Biden administration has shown actions that recognized that climate justice is also racial justice for the communities that will face the brunt of the consequences of fossil fuel dependence in the nation will be communities of color.

Second, other agencies in Biden's administration have shown similar positive actions that reestablish federal support for environmental justice. For instance, the Department of Justice has established its own Office of Environmental Justice in order to formally handle cases regarding environmental based civil rights issues.⁵⁵ This is the first time an actual strategy has been implemented to outline how environmental justice cases should be handled at the federal level. Attorney General Garland stated: "Although violations of our environmental laws can happen anywhere, communities of color, indigenous communities, and low-income communities often bear the brunt of the harm caused by environmental crime, pollution, and climate change." This attitude from the senior legal official from the Biden administration exemplifies the commitment to environmental justice that has been lacking in years prior. Additionally, the EPA has also reorganized its own Office of Environmental Justice into the Office of Environmental Justice and External Civil Rights, which will include 200 dedicated EPA staff that will work directly with communities, work on grants, work with state offices to incorporate environmental justice into practice, and ensure EPA funding recipients comply with the law.⁵⁶ Overall, the Biden administration has proven that environmental justice should be prioritized and is working to formally cement support in the federal government.

An example of state action took place recently in California in response to concerns regarding the lack of limits for how close wells can be to vulnerable facilities. In 2022, Governor Newson signed into law a new bill that would require oil and gas companies to have a buffer zone (of 3,200 feet) between newly built wells and schools, hospitals, or homes. ⁵⁷ It highlights the promising support for environmental justice. It should be stated that oil or gas companies should not have been allowed in the first place to operate in such proximity to children, families, or those with compromised immune systems. A lack of regulations for this type of matter shows that there is still a lot for states including California to do.

Lastly, returning to Louisiana, in 2022 the region experienced a few wins of their own for environmental justice. These wins involved the advocacy of environmental justice groups who protested against the proposals to build

⁵⁴ Boos, Robert. "Native American Tribes Unite to Fight the Keystone Pipeline and Government 'Disrespect." The World from PRX. Last modified February 19, 2015. https://theworld.org/stories/2015-02-19/native-american-tribes-unite-fight-keystone-pipeline-and-government-disrespect. 55 U.S. Department of Justice. "Justice Department Launches Comprehensive Environmental Justice Strategy." Last modified May 5, 2022. https://www.justice.gov/opa/pr/justice-department-launches-comprehensive-environmental-justice-strategy.

⁵⁶ U.S. Environmental Protection Agency. "EPA Launches New National Office Dedicated to Advancing Environmental Justice and Civil Rights." Last modified September 24, 2022. https://www.epa.gov/ newsreleases/epa-launches-new-national-office-dedicated-advancing-environmental-justice-and-civil. 57 California Legislature. "Bill Text - SB-1137 Oil and Gas: Operations: Location Restrictions: Notice of Intention: Health Protection Zone: Sensitive Receptors." Accessed April 18, 2023. https://leginfo. legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137.

petrochemical plants that would have emitted harmful emissions into the community air.⁵⁸ After pressure from groups and measures from the Department of Environmental Quality the proposal was revoked. Shortly after this, a Louisiana district court denied air permits for a different chemical plant. This plant would have added to the cancer-causing pollutants already present in Cancer alley.⁵⁹ These actions and work by advocacy groups will be examples for the future to come and reinforces how much power communities have to make change where others have held private interests above the health and humanity of communities of color. Commitment and investment into environmental justice initiatives are growing and the momentum is not isolated to the United States as the next section will cover what environmental justice looks like on the global scale as many other countries are also dependent on fossil fuels and environmental justice is also felt across the globe.

IV. Global Environmental Justice

Climate change is by design a global issue. But the impact of this issue is incontestably more pronounced in the Global South. On one hand, the Global South is more vulnerable to climate-related disasters. On the other hand, the adaptation and mitigation capacity of countries in the Global South is also limited. Combined with the burden of colonialism and the present-day neoliberal economic paradigm, the Global South is now confronting an existential crisis. Just last year, Pakistan was swept over by unprecedented floods, which as per the government's official report, claimed more than 1,739 lives and displaced more than thirty-three million people. 60 The villages became islands, entire crops were covered in green, putrid water, and water-borne diseases became widespread. There could not be a more perfect recipe for inundating an already fragile state like Pakistan and bringing it to a total standstill as the world watched in horror the scale of the tragedy unfolding. This particular tragedy managed to get international eyeballs, but more often than not, climate kills us quietly – as the inhabitants of Lahore and Delhi know all too well now. The air that keeps us alive simultaneously fills our lungs with literal poison. And yet the gravity of the situation in the Global South has not fully dawned upon Global North. 85% of the population lives in the Global South but countries in the Global North have emitted at least three times as much pollution. 61 Pakistan's share in total carbon emissions is just about 0.5% by, yet it is the 9th most vulnerable country to climate change as per Global Climate Risk Index. 63 Sea level rise in Bangladesh every day pushes some 2000 people in coastal areas to migrate to Dhaka⁶⁴ but

⁵⁸ Earthjustice. "Two Big Wins against Petrochemical Pollution — and a \$85M Boost for the Communities Fighting It." Last modified September 21, 2022. https://earthjustice.org/article/two-big-wins-against-petrochemical-pollution-and-an-85m-boost-for-the-communities-fighting-it.
59 Ibid.

⁶⁰ National Disaster Management Authority. "NDMA Floods (2022) SITREP - 2022 (Daily SITREP No 158 Dated 18th November 2022)" (PDF). Last accessed November 27, 2022. https://www.ndma.gov.pk/Documents/sit_rep/Daily%20Situation%20Report%20158.pdf.

⁶¹ Callaghan, Max, et al. "Machine-learning-based Evidence and Attribution Mapping of 100,000 Climate Impact Studies." Nature Climate Change 11, no. 11 (2021): 966-972.

⁶² Global Carbon Project; Expert(s) (Friedlingstein et al. (2022), Andrew and Peters (2022)). Statista. 63 Eckstein, David, Vera Kunzel, and Laura Schafer. 2021. "Global Climate Risk Index 2021." Germanwatch. January 25, 2021. https://www.germanwatch.org/en/19777.

⁶⁴ Sun, Yazhou. 2022. "Climate Migration Pushes Bangladesh's Megacity to the Brink." Bloomberg com. June 28, 2022. https://www.bloomberg.com/news/features/2022-06-28/bangladesh-flooding-fuels-climate-migration-to-dhaka.

Bangladesh's share in total carbon emissions is a mere 0.21% 65. 55 vulnerable countries suffered climate-linked losses amounting to \$525 billion just in the last two decades. On paper, these are mere numbers. In real life, these numbers translate to multiple lost lives, damaged homes, and mass displacements. The mismatch between the greenhouse gas emissions and the burden of climate change is so staggering that half of the emissions in the world can be attributed to only the top 3 countries i.e., China, United States, and India. 66 This is not coincidental; this is precisely the environmental degradation that has made these countries the economic powerhouses of today. The idea of development that these nations, in fact, every nation in the World, including Pakistan, is striving for, is based on gargantuan consumption. Owning more cars, getting bigger houses, building giant factories, flying to exotic locations for vacations – all of these are status symbols of prosperity. Meanwhile, these same ideals of prosperity feed into the ever-increasing emission levels. Consumption requires production, and more production is considered the key to pumping up flashy economic indicators like GDP. This idea of economic development is asphyxiating the environment in the process. In developing countries, the effect is even more pronounced since they do not have the capacity to adapt or mitigate.

Repercussions of Neoliberal Urban Development Paradigm for Environment

Post-World War II, the "free market" has become the dominant economic model whose modus operandi is to facilitate the free movement of capital across national borders. Resultantly, developing economies have also undergone adjustments to restructure their economies accordingly. In the process of doing so, subsidies on health, education, and housing have been shunned away. The responsibility of building infrastructure has been relegated to the private sector. The reforms pushed by international financial institutions (IFI) like the International Monetary Fund and the World Bank have entirely reshaped the politics of land development. In almost all cases, the governments in these countries have caved to the pressure from these IFIs to bring foreign direct investment into the country. The response has generally been to make more land available via environmentally inappropriate land use conversions, clearing away the slums and informal settlements, and green signaling dubious development schemes.⁶⁷

The above-stated phenomenon has a profound effect on the way our cities have been developed. A powerful nexus of weak governments and international investors seeking new markets to park their capital has been developed which has inevitably produced a neoliberal model of urban development. In some countries, the military has also become a major stakeholder in this paradigm. The manifestation of this paradigm has been in the form of the "World Class" cities. Karachi, Delhi, Seoul – all these cities have this aspiration of being world-class cities like Dubai or Shanghai, as reflected in the narrative that has been built by the policymakers of these cities. The eminent Bangladeshi architect Mahbubur Rahman has described the world-class city agenda as: the city's architecture should be iconic, the city should have a unique selling point which

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Hasan, A. 2022. The Search for Shelter: Writings on Land and Housing. Oxford University Press.

can be cultural or industrial, high-rise apartments should be built as opposed to informal, low-rise neighborhoods, tourism should be the mainstay of city's economy, and poverty should be out of sight away from the main city and out in the peripheries.⁶⁸

This agenda is expensive, and this is where the role of foreign direct investment (FDI) kicks in. In pursuit of ticking off all these items of the world-class city agenda, appealing to global capital becomes the number one priority, and that in turn has determined the social and physical form of our cities. The purpose of the land is now determined solely on the basis of what it represents monetarily, divorced from any environmental consideration. One prime example of this environmentally catastrophic approach to urban planning is the degradation of Karachi Beach. Karachi, one of the biggest metropolitan cities in the world, boasts a 55-mile-long coast. Along this coast, there are massive mangrove forests, tons of creeks, and several ancient fishing villages. However, in pursuit of "development", this coastline has been compromised severely, first by the military, and secondly, by global real-estate companies. It is almost like these entities point their fingers to the sea and magically, a chunk of land appears instantly which can now be reclaimed and turned into high-rise buildings and luxury hotels to generate profits.

The super-elite neighborhood adjacent to the beach belongs to the Pakistan Defense Officers Housing Society (DHA), which is primarily owned and operated by the military. In 2002, DHA developed a promenade along a certain part of the beach, which is now known as Seaview. However, when the general public and hawkers started frequenting this, DHA tried to stop them, since in their own words, they wanted this promenade to be frequented by "decent" people only. Thus, essentially, the sea which is a public good was restricted to the elite. This was the first step in the direction of environmental degradation. By restricting the access of the public, DHA also shunned the fisherfolk whose lives were dependent on the sea.⁷⁰

In 2004, DHA took the final and most effective step to degrade the environment once and for all. DHA initiated a mega housing project worth USD 4.2 billion which involved building luxury hotels, some 4000 luxury apartments, and private beaches for hotels and residents. All of this was to be built by Emaar, a Dubai-based real estate company. The effect on the environment was immediate and decisive. Some 74.5 acres of land were reclaimed to make space for the project. Access to deep waters which was necessary for fishing was immediately cut off. Mangrove forests were bulldozed to provide timber as well as to provide further space. These mangroves used to be a major breeding ground for a lot of marine life, especially shrimps. Marine life is almost non-existent on Karachi Beach. On top of it, these mangroves also used to act as a buffer against floods. At one point, Pakistan was the 6th largest country in terms of the size of its mangroves, now it has slipped down to the 35th spot. Now with no buffer and obstruction of existing floodplains that could absorb the flood water and

⁶⁸ Rahman, Mahbubur. "Economy, Environment, Culture: Global Dreams By Two Asian Cities." ArchNet-IJAR 4, no. 1 (2010).

⁶⁹ Marvi, M. "Land Reclamation: An Ecological Neglect. A Study of Karachi's Coastline from China Port till Emaar." N.d.

⁷¹ Mazhar, Marvi Ahmer | Anushka Maqbool | Harmain. 2020. "Reclaiming Karachi's Edge." DAWN.COM. August 23, 2020. https://www.dawn.com/news/1575686.

re-channel it back to sea, Karachi experiences flash floods every year during monsoon season. The psychological toll of living through these floods every year is incredibly devastating.

And this is just the tip of the iceberg. The struggle between the real estate nexus and local home-grown movements against this nexus is ongoing. There are multiple projects that these movements have managed to quash, but the capacity of these NGOs in the face of the aforementioned nexus is limited. Karachi is just one example; the issue is way more common. 11 of the 14 largest megacities located along the coast in the world are in Asia.⁷² It has been well-documented that in a lot of cities, major geo-engineering has been done in the form of coastal land reclamation or what is generally called "ocean sprawl". 73 This insidious grip of the neoliberal economic paradigm on developing economies, where the relentless pursuit of free market capitalism is divorced from the welfare of people and the environment, is inextricably linked to the cataclysmic forces of climate change that now threaten our very existence.

Conservation Refugees

Over the last three decades, almost 40% of Gilgit Baltistan (a contested territory in the Kashmir region of Pakistan) has been turned into national parks, game reserves, wildlife sanctuaries, and hunting grounds- essentially everything out of the control of the indigenous population.⁷⁴ This approach has been critically propagated by international conservation organizations (e-INGOs). The top two names in this regard are the World-Wide Fund for Nature (WWF) and the International Union for Conservation of Nature (IUCN). Both organizations enjoy a significant presence in the region. This approach runs in the exact opposite direction of the indigenous construction of nature. The modern idea of conservation treats the practices of local communities as a direct threat to nature. The roots of this apparent clash in Western versus indigenous approaches to conservation can be traced back to the way nature has been conceived differently in both these societies.

Historically, the Western idea of nature has been a pristine wilderness devoid of people which needs to be preserved and toured but never a place to live in as a holistic social landscape. "Natural" and "social" are two different entities as per this conception. Initially, this approach was taken up in response to the degradation of the environment by early capitalist development. The impulse of conservationists was thus to keep capitalism out by drawing a clear distinction between nature and society. But over time, especially with the advent of neoliberalism, this approach has been twisted to further the advance of capitalism in a peculiar manner. Now in the wake of free market doctrine which has come to be the supreme lens of viewing everything and everyone, nature is supposed to be preserved but also generate profit.⁷⁵ This has given birth to the contemporary Western conservationist approach where nature is to be preserved by declaring them as protected areas and driving out the indigenous communities, but at the

⁷² United Nations. 2017. "Factsheet: People and Oceans." Accessed April 18, 2023. https://www. un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf. 73 Firth, Louise B., et al. "Ocean Sprawl: Challenges and Opportunities for Biodiversity Management in a Changing World." Oceanography and Marine Biology: An Annual Review 54 (2016): 189-262. 74 Ali, N. Delusional States. Cambridge University Press, 2019.

⁷⁵ Cronon, William. 1996. "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature." Environmental History 1, no. 1: 7-28.

same time, the profits are to be generated by turning them into game reserves and hunting grounds.

This logic of saving nature to sell it and selling nature to save it has become the go-to framework of e-INGOs like WWF and IUCN. The commodification of nature has also been institutionalized via ecotourism, bioprospecting, tradable emission permits, fishing quotas that can be transacted, and the establishment of intellectual rights over crop varieties. Packaged as "sustainable" or "community-based" development, this construction of nature is made possible by evicting indigenous communities altogether from their lands. This has led to an alarming number of "conservation refugees" globally. It is estimated that there are roughly 20 million refugees globally, but this number is very difficult to measure since no country other than India keeps track of this class of refugees. However, there has been a definitive increase in the number of protected areas. In 1960, there were only 1,000 such protected areas around the world. As of 2010, that number stood at 285,409.

While the neoliberal economic practices of the World Bank and IMF have been critiqued extensively before, it is only recently that the same neoliberal angle of international conservation organizations has come to light. This is partly because of the aforementioned branding and packaging of those practices as sustainable. This is not to suggest that e-INGOs are entirely ineffective or devoid of ethics altogether, in fact, they have done quite a lot of solid work in terms of preserving the environment, but their ethical values need to be reconsidered in the context of indigenous communities of Global South since these ethics constitute one of the channels through which the livelihoods of indigenous communities are being superseded by neoliberal agenda. In the case of Gilgit Baltistan, there has been a lot of resistance by the local community, especially the Shimshal village. Over time, this resistance has been successful in establishing a discourse in the international conservation field that the historical idea of nature based on wilderness is not feasible anymore, at least not in this part of the World. International NGOs are beginning to come around. Local communities are also seeing the error of their ways, especially as a way to counter the Western idea of conservation. They want to pitch themselves as a community that can responsibly take care of their own environment. For example, one of the areas where this collaboration between e-INGOs and local communities has been effective is sustainable grazing practices where the community itself demanded these NGOs to provide them training on this subject matter.⁷⁸

There is also the deeper issue of how regions like Gilgit Baltistan have been used as sites for the project of 'ecological nationalism' where the environment and space are reordered to define the nation in terms of landscape. In the case of Pakistan, we can see it in the ways the whole Kashmir region is presented as the eco-body of the nation. James Scott in his seminal work "Seeing Like a State" has extensively written how the state extends its territorial control precisely by objectifying the space. However, this issue warrants a different discussion and is not within the scope of this paper, but it is nonetheless an interesting point for future studies.

⁷⁶ McAfee, Kathleen. 1999. "Selling Nature to Save It? Biodiversity and Green Developmentalism." Environment and Planning D: Society and Space 17, no. 2: 133-154.

⁷⁷ Geisler, Charles. 2003. "A New Kind of Trouble: Evictions in Eden." International Social Science Journal 55, no. 175: 69-78.

⁷⁸ Ibid.

⁷⁹ Scott, James C. 2000. Seeing Like a State. Yale University Press.

Climate Reparations

The concept of climate reparations is not entirely new, in fact, the first official mention of it was back in 1991; however, in recent years, the issue has gained headlines because of the mounting pressure from vulnerable countries. In last year's COP, the idea of a "loss and damage" fund was floated but there is no technical definition of what constitutes a loss, much in the same way that there exists no concrete definition of 'adaptation'. But the term has come to represent the demand of vulnerable countries to be compensated for (1) the irreversible damage that has already been caused by climate change, and (2) the future damage that cannot be avoided no matter how many corrective measures are taken at this point. This demand goes back to 1991 during negotiations of the United Nations Framework Convention on Climate Change when the Alliance of Small Island States (AOSIS) had proposed to establish a global 'insurance' pool that would work similarly to the traditional 'loss-sharing' schemes of the insurance industry. AOSIS had even proposed a formula for assessing which country will contribute how much. This formula was adopted from the 1963 Brussels Supplementary Convention on Third Party Liability in the field of Nuclear Energy which dictated that 50% of the contribution would be based on the country's emissions in the previous year, and 50% would be based on the country's share in the global gross national product (GNP).80 However, the proposal was rejected and was not included in the official agenda.

In 1995 at the first Conference of the Parties (COP), the topic was brought up again, and this time, an agreement was reached where insurance was mentioned as one of the adaptation tools for vulnerable countries. However, no further progress was made until 2001 when COP agreed to hold a workshop to study this further. That agreed-upon workshop was finally held in 2003. The paper produced as a result of that workshop identified a few of the insurance strategies that could be used, but again no concrete progress. Another round of workshops was also held in 2007 upon demand of AOSIS where the idea was further fleshed out.

The issue gained an increased profile at COP13 and COP14 where AOSIS came back with renewed demand. This time they were proposing establishing a "Multi-Window Mechanism to address loss and damage" which will have three components: (1) Insurance Component to compensate for past damage and will be as per the formula of Brussels convention, (2) Rehabilitation Component to address future damages which will be assessed as per negotiated baseline amount, and (3) Risk Management Component to enhance the capacity of risk assessment and provide risk management tools to vulnerable countries.

Two decades after the initial demand of AOSIS, the 'Warsaw International Mechanism' (WIM) was established in 2013 to address loss and damage. The decision was hailed as a major win for proponents of climate reparations, but over time, it became clear that WIM was not effective. It remains dormant to date. This is why when the Paris Agreement was being negotiated, AOSIS and the LDC group included the demand of developing a system within the fixed time frame (unlike WIM) to address reparations in their "must-haves" list. Developed countries were hesitant to do so on the pretext that WIM already has been estab-

⁸⁰ Linnerooth-Bayer, J., M.J. Mace, and R. Verheyen. 2003. "Insurance-Related Actions and Risk Assessment in the Context of the UNFCCC." May 2003. http://unfccc.int/files/meetings/workshops/other_meetings/application/pdf/background.pdf.

lished and as per them, it was sufficiently working as intended. If the intention was to stall the issue, then WIM was indeed working as intended. There was also the domestic political issue of the US that crept into this Paris Agreement. The US wanted to avoid any mention of financial obligation in the agreement since that would require congressional approval. The goal of the US was to have an agreement within the existing mandate. For this reason, the USA vehemently opposed the inclusion of even a slight mention of loss and damage in the final agreement. Consequently, the final agreement just aims to strengthen the existing WIM rather than opening new lines of funding.

In the years since 2016, the political landscape has changed quite a lot. The growing intensity of climate change has increased media attention. Last year, when Pakistan was inundated by floods, COP 27 was being held where the USA and the European Union agreed to support the fund on two conditions, both of which are politically difficult (almost impossible) to fulfill. The first condition is to reduce the number of countries eligible for funding, which is unsurprisingly going to be a very difficult goal to achieve since it is unlikely that any country will agree to leave the spot. Even trickier is the second demand which is that the US and the EU want to include all the countries that emit heavily including China, India, and Qatar in the donor base. These countries have historically been vehemently opposed to that idea, hamstringing efforts to realize climate reparations. Additionally, China is still building coal fire plants around the world, it is hard to fathom that China will agree to act responsibly when it comes to equitable climate outcomes either.

Another committee has been formed to investigate these demands and report back at COP28. It is important to keep in perspective that all of this is happening against the backdrop of massive climate catastrophes. Since 1991 when the first demand was made by AOSIS, several lives have been lost, people have been rendered homeless and displaced, children have lost access to education, and entire communities have been ravaged.

V. Conclusion

Until the mid-20th century, the EPA, the DOE, and protections for clean air and water had not yet existed. Processes for superfund cleanup and environmental assessments had not been initiated either. The United States has made significant progress in enshrining environmental justice through policy and agencies, but the country has a long way to go before realizing environmental justice principles. Environmental outcomes are still racially segregated with the most systematically disadvantaged populations being the most susceptible to poor environments. Globally, the tale is much bleaker. Because the consequences of greenhouse gas emissions are distributed without regard for national borders, if nations continually fail to achieve consensus over accountability, negative environmental outcomes will continue to be concentrated in regions that have less bargaining power within the context of international relations. However, because so many quality-of-life indicators are tied to the natural environment, good environmental policy with an eye toward environmental justice has the potential to benefit livelihoods at a vast scale.

⁸¹ Bodansky, Daniel. 2015. "Legal Options for US Acceptance of a New Climate Change Agreement." May 2015. http://www.ourenergypolicy.org/wp-content/uploads/2015/05/legal-options-us-acceptance-new-climate-change-agreement.pdf.

Bill Sponsorship, Polarization, and Congressional Centralization of Power during the Reagan and Obama Administrations

Ethan Winter

Introduction

Several metrics demonstrate that political polarization is increasing in the United States, including the rising percentages of citizens who view the opposing party as a threat to the nation, increased self-selection among friend groups and living locations, and fewer bipartisan votes in Congress. This study will focus on Congress, particularly concerning polarization, power centralization, and the embrace of national agendas.

Researchers have extensively documented the empowerment of the Speaker of the House since the late 1970s and 80s. Although Newt Gingrich is frequently blamed for increasing the power of the Speaker, the process started in the 1970s, when Democratic "members gave House leaders new authority and institutional resources" over appointments to committees, which bills would hit the floor, and the "right to refer a single bill to multiple committees." Congress members empowered party whips and weakened the rights of most senior committee members. Speaker Gingrich and House Republicans later "chose committee chairs in violation of seniority rank," "imposed term limits on their committee

¹ Pew Research Center, "Political Polarization in the American Public," Pew Research Center, June 12, 2014, https://www.pewresearch.org/politics/2014/06/12/political-polarization-in-the-american-public/; Clio Andris et al., "The Rise of Partisanship and Super-Cooperators in the U.S. House of Representatives," PLOS ONE 10, no. 4 (April 21, 2015). https://doi.org/10.1371/journal.pone.0123507.
2 Frances E. Lee, "How Party Polarization Affects Governance," Annual Review of Political Science 18, no. 1 (May 11, 2015): 268, https://doi.org/10.1146/annurev-polisci-072012-113747.
3 Ibid.

chairs," and abolished "three committees and two dozen subcommittees." By 2015, John Boehner practically singularly determined which bills hit the floor by appointing members to the Rules Committee. Although House members could attempt to influence this process, their ability to push back against the Speaker was marginal. Josh Huder describes this as marrying "the goals of the Republican Party with the legislative process of the House." 5

Notably, the expanded role of the Speaker extends beyond the halls of Congress. In recent decades, Congressional leadership has been "expected to take responsibility" for winning the majority through national elections. This role is fueled by a performative need to appear victorious over the opposition, leading to opportunities for each party to target votes that publicly shame the other party. Empowering Congressional leaders to be faces of national policy encourages unified, partisan national politics and discourages debate, compromise, and the diversity of policy.

Thus, this paper aims to observe changes in polarization and centralization of power by leadership between the 97th and 111th Congresses. To do so, we represent the voting patterns of individual Congress members along two axes: Willingness to vote with majority-sponsored bills and willingness to vote with minority-sponsored bills. We found that House leadership has centralized voting practices significantly, and the Senate has seen increased party polarization, both in willingness to vote with the opposing party and in willingness to bring opposition bills to a vote.

Based on the analysis of bill sponsorship between the 97th and 111th Congresses, we conclude that polarization is on the rise. However, polarization takes different forms depending on the Chamber. In the House, the Speaker is the de facto ruler over bill-making and voting schedules and can ensure highly centralized voting results. In the Senate, members of Congress are less centralized and freer to vote ideologically. Due to Senate procedure that dictates 51 Senators must vote yea to bring a bill to vote and the rise of the filibuster, the most moderate Senators have an even more radical share of power. For both chambers, the tools of polarization are not new, only newly utilized.

Different Forms of Congressional Polarization

In this section, we analyze the impact of changes to procedural and hierarchical rules in the House of Representatives and the decline of norms and collegiately in the U.S. Senate, which is linked to polarization, more frequent use of the filibuster, and increased power of individual senators.

From a theoretical standpoint, the work of Aldrich and Rhodes provides a firm ground for our approach. As noted by the authors:

"... considerations related to the amount of preference homogeneity within legislative parties are reinforced by considering the amount of preference conflict between them. As conflict increases, so do the negative consequences to members of either party from a legislative victory by their opponents. That is, if the distribution of opinion is relatively similar within both parties, the policy chosen

⁴ Lee, "How Party Polarization Affects Governance," 268-69.

⁵ Josh Huder, "It's Congress's Fault: How Congress Polarizes America | The Government Affairs Institute," accessed January 15, 2022, https://gai.georgetown.edu/its-congresss-fault-how-congress-polarizes-america/

⁶ Lee, "How Party Polarization Affects Governance," 270-71.

⁷ Huder, "It's Congress's Fault: How Congress Polarizes America | The Government Affairs Institute."

by the minority party will not be very far from that preferred by the majority, and so a minority victory on a bill will not hurt the majority greatly. If, on the other hand, the respective distributions of opinion are very different, the minority's policy is likely to, make the majority very unhappy. In the latter circumstances, the members of the majority would have a lot more incentive to empower their leaders to prevent a minority victory on legislation than in the former case. These two considerations—preference homogeneity and preference conflict—together form the "condition" in Conditional Party Government. As they increase, the theory predicts that party members will be progressively more willing to create strong powers for leaders and to support the exercise of those powers in specific instances. When diversity grows within parties, on the other hand, or the differences between them are reduced, members will be reluctant to enhance leader powers. This is the central prediction of CPG."8

In their concluding paragraph, the authors argue that "homogeneity and divergence that the parties have exhibited for the last two decades should continue, and in turn, so should the willingness of members to empower their party leaderships in order to advance the party's policy agenda. These patterns should, moreover, be reinforced as long as the partisan division of the two chambers is close, and control in the next election remains seriously in doubt."9

Procedural Rules and Hierarchy in the House

Incumbent Congress members are difficult to unseat, and House leadership rarely changes. ¹⁰ In 117 Congresses, there have been fewer than ten resignations by the Speaker of the House.¹¹ Previously, the Speaker could be held in check by the most senior members and their numerous committees. But, as the seniority rule became obsolete and the number of committees reduced, the Speaker's office consolidated power.¹² For instance, during Rep. John Boehner's time as Speaker, he could dictate which bills received a vote by invoking his power to replace members of the Rules Committee—Rules Committee members who might choose to oppose him had very few options. 13 Members who might turn against party leadership could be bribed using committee position incentives or promises to bring specific bills to vote.14

These changes afford the Speaker a "more centralized, streamlined process ... in which a unified majority party can work its will while the minority party enjoys little opportunity to shape outcomes or even put the majority on the record in awkward ways." Minority members are not often afforded the time to review legislation, the time to propose amendments, or the ability to propose amendments. 15

tives."

⁸ John H. Aldrich and David W. Rohde. "The Logic of Conditional Party Government: Revisiting the Electoral Connection." In Congress Reconsidered, edited by Lawrence C. Dodd and Bruce I. Oppenheimer. Washington, D.C.: CQ Press, 2001.

⁹ Ibid

¹⁰ John N. Friedman and Richard T. Holden, "The Rising Incumbent Reelection Rate: What's Gerrymandering Got to Do With It?," The Journal of Politics 71, no. 2 (April 2009): 593, https://doi. org/10.1017/S0022381609090483.

^{11 &}quot;List of Speakers of the House | US House of Representatives: History, Art & Archives," accessed January 16, 2022, https://history.house.gov/People/Office/Speakers-List/.

¹² Lee, "How Party Polarization Affects Governance," 268-69.

¹³ Huder, "It's Congress's Fault: How Congress Polarizes America | The Government Affairs Institute." 14 Andris et al., "The Rise of Partisanship and Super-Cooperators in the U.S. House of Representa-

¹⁵ Lee, "How Party Polarization Affects Governance," 269.

Despite a slim majority of twelve or fewer Representatives in the 117th Congress, Democrats revoked the minority party's "motion to recommit," which further limited Republicans' ability to add "a final amendment to a bill." Reducing the minority party's power alienates the minority's membership and effectively limits the pool of members that choose the Speaker. With the minority party defanged, leadership took a new aim to "build distinctive party brands and prevent intra party divisions," which led to "more party-line votes and a larger level of observed polarization." ¹⁷

As centralization increased, the branding of the parties' ideologies became more unified, and party leadership suppressed internal divisions. There was extreme pressure within the majority party to conform to the goals (ideology) of the Speaker. Using the Democratic party as an example, this pressure is felt by both far-left Representatives as well as swing vote Representatives (moderate extremists). However, the pressure is unlikely to be applied evenly. Swing vote Representatives can leverage their ideological proximity to the Republican (opposition) party to force the Speaker to act in a specific way; far-left Representatives cannot as easily. 18

Clio Andris et al. find that non-cooperation in the House "has been increasing exponentially for over 60 years" and postulate that partisan candidates are unwilling to negotiate with the opposition, but "moderate legislators" have "a competitive advantage in negotiating for their party's legislation." The authors speculate that logrolling could play a role in the decision-making for moderates but cannot measure this due to the private nature of this kind of deal-making. As a result, this negotiation capability forces the Speaker to defer to members who are ideologically closer to the opposite party.²⁰

The Senate: The Moderate are the Extremists

Centralization of power is also on the rise in the Senate, albeit to a lesser degree than in the House. The Senate cannot stop any Senator from indefinitely speaking, barring cloture, "a procedure that allows a Senate supermajority of at least 60 to bring a matter to vote." Senate leaders have taken steps to limit each individual Senator's powers by "negotiating complex unanimous consent agreements." However, this does not negate the innate right of each Senator. Unlike in the House, where members with power were proportionally low and awarded to the most senior committee members, each Senator holds power by controlling legislation on their own. 22 Thus, it is unlikely that a majority of Senators would move to change these procedural rules and reduce their own influence.

Despite relatively minimal changes to Senate procedures, the culture of cloture and filibuster has radically changed in recent decades. Lee outlines that

¹⁶ Andrew Taylor, "Democrats Tighten Control with House Rules Changes," AP NEWS, April 21, 2021, https://apnews.com/article/legislation-coronavirus-pandemic-nancy-pelosi-fce-0c1079db207aaa15d146e19ab4f2d.

¹⁷ Michael J. Barber and Nolan McCarty, "Causes and Consequences of Polarization," in Solutions to Political Polarization in America, ed. Nathaniel Persily (Cambridge: Cambridge University Press, 2015), 36, https://doi.org/10.1017/CBO9781316091906.002.

¹⁸ Andris et al., "The Rise of Partisanship and Super-Cooperators in the U.S. House of Representatives"

¹⁹ Ibid.

²⁰ Ibid.

²¹ Lee, "How Party Polarization Affects Governance," 269.

²² Ibid, 269-270.

cloture in the 1960s and 1970s mainly limited the "unrestrained activism' of individual senators" during filibusters. But by the 1990s, "the Senate minority party began to systematically deploy filibustering to veto the majority party's agenda." The power of the filibuster enables Senators to represent party ideals and shut down the chamber.

Barber and McCarty illustrate this point effectively. In a scenario where all Senators vote ideologically, "then the senators located at the 41st and the 60th most-leftward positions must support any new legislation because no coalition can contain three fifths of the votes without including them." In such a scenario, the "policy making is driven not by the median legislator but ... the more extreme legislators." Empowering the most extreme members of the Senate and creating such a wide spread of ideological differences to cross for each piece of legislation "reduces opportunities for new legislation and increases the status-quo bias of American politics." ²⁵

Congressional Leadership Moves National

According to Lee, "Since 1980, the number of people employed by party leadership offices in both House and Senate has more than doubled, and half or more of the total increase is attributable to growth in the parties' communications staffs." Leadership uses these staff members to "coordinate members' talking points, floor speeches, and media appearances" as well as establish a comprehensive media presence. In contrast, records from the 1960s and 70s that have "virtually nothing to say about majority-seeking as a task for congressional leaders."

Congressional leadership communications focus on marginalizing and embarrassing the opposition.²⁹ Huder argues that votes to embarrass the opposition are just as likely in Congress as those representing good policy. He uses the 113th House's handling of "eight derivative bills" as an example. Seven versions of the bill made it out of committee easily, and the one that "drew a straight party line vote" went to the floor before any of the other eight.³⁰

Andris et al. "find that polarization is part of a long-term exponential trend implying that non-cooperation multiplicatively breeds non-cooperation." Their findings are particularly grim for the past and future of Congress. This trend has existed for over 60 years, implying that "today's partisan atmosphere may not be a product of recent political splintering." Problematically, Congress's current polarized state increases the likelihood of seating more polarizing candidates, creating less bipartisanship. As voters continue to elect more and more partisan candidates and Congress members are "re-elected at least 90% of the time," the likelihood that Congress will become more bipartisan falls. ³¹

²³ Ibid, 269.

²⁴ Barber and McCarty, "Causes and Consequences of Polarization," 40.

²⁵ Barber and McCarty, "Causes and Consequences of Polarization," 41.

²⁶ Lee, "How Party Polarization Affects Governance," 270.

²⁷ Ibid

²⁸ Ibid.

²⁹ Ibid, 270-71.

 $^{30\ \} Huder, "It's \ Congress's \ Fault: How \ Congress \ Polarizes \ America\ \mid\ The \ Government \ Affairs \ Institute."$

³¹ Andris et al., "The Rise of Partisanship and Super-Cooperators in the U.S. House of Representatives."

Federalization versus Centralization

Over the last several decades, Congressional leadership has participated in an arms race of centralization in the House and expansion of filibuster culture in the Senate to create "more cohesive and distinctive" parties. ³² Congressional leaders wield direct control over members' platforms and indirect control through the party's public messaging. ³³ Although centralization is not the sole factor, Lee finds that "when party conflict occurs, both representatives and senators exhibit far more loyalty to their parties than they did in the past." ³⁴ From the 1970s to 2000, party loyalty increased from nearly 60% to 87%. ³⁵ Members themselves have acknowledged that leadership pressure has "increased over the years." ³⁶

However, blame is not solely on leadership. During the 50s, 60s, and 70s, Democrats gradually lost their status as the "natural majority party in Congress." Alongside their fall from power came tighter "margins of control," and "party control of Congress has shifted repeatedly." These factors led to more competitive election cycles and "party organizational development." Barber and McCarty note that Congress members observed these competitive cycles and found it beneficial to "differentiate their own party from the opposition." By uniting fellow party members, "a norm of 'teamsmanship' emerged, with members' individual interests becoming increasingly linked to the fate of their parties." This "teamsmanship" has led to fighting even in the face of "nonideological issues."

Methodology

In this study, we chose to compare the 97th Congress (President Reagan's first two years) and the 111th Congress (President Obama's first two years). These two Congresses were selected for various reasons, primarily their relative proximity to Newt Gingrich's tenure as Speaker of the House. We sought to place at least ten years before and after Gingrich began his term as Speaker in 1995 while choosing a Congress at the start of a new President's term. Because ten years prior to Speaker Gingrich's term lay in the middle of President Reagan's administration, we rounded down to the 1981 House (97th). Ten years post Gingrich is near the end of President George W. Bush's administration, so we rounded up to the 2009 House (111th).⁴²

As addressed in the background sections, Speaker Gingrich is not the sole owner of polarization within Congress. However, during his tenure there were significant levels of centralization. By leaving ten or more years before Gingrich's

³² Lee, "How Party Polarization Affects Governance," 267.

³³ Ibid, 270.

³⁴ Ibid. 263.

³⁵ Ibid, 263-64.

³⁶ Barber and McCarty, "Causes and Consequences of Polarization," 36.

³⁷ Lee, "How Party Polarization Affects Governance," 267.

³⁸ Ibid.

³⁹ Lee, "How Party Polarization Affects Governance," 267-68.

⁴⁰ Barber and McCarty, "Causes and Consequences of Polarization," 37.

⁴¹ Ibid.

^{42 &}quot;List of Speakers of the House | US House of Representatives: History, Art & Archives," accessed January 16, 2022, https://history.house.gov/People/Office/Speakers-List/; "Chronological List of Presidents, First Ladies, and Vice Presidents of the United States - Guides, Reference Aids, and Finding Aids (Prints AndPhotographs Reading Room, Library of Congress)," accessed January 20, 2022, https://www.loc.gov/rr/print/list/057_chron.html.

time as Speaker, we hope to avoid most of the partisan buildup that led to him specifically being placed as Speaker. By this same method, we hope to avoid his personal, direct contributions and observe his legacy instead.

Target & Data

The analysis uses roll-call vote and sponsorship data from each Congress member to find the level of centralization and polarization within the overall chambers. This information is laid out (per member) on an X/Y plot where willingness to vote with majority-sponsored bills is on the X, and willingness to vote with minority-sponsored bills is on the Y. To create the data needed, we use three sources, the first two of which are most important:

- 1. VoteView's Realtime NOMINATE Ideology and Related Data⁴³ for:
 - a. A list of all members in each Congress
 - b. A list of all votes taken by each member during the session
 - c. A list of all roll-call votes taken (and affiliated bill numbers) in each chamber
- ProPublica's Bulk Data on Bills⁴⁴ for the sponsorship behind each proposed bill
- 3. The @unitedstates project's congress-legislators repository⁴⁵ for Congress members' term start and end dates and data connectors

In summary, we determine the potential roll-call votes for a member, grouping them by the sponsoring party, Democrat or Republican. Subsequently, we find all roll-call votes that a member voted yea on and further split these into two counts by sponsoring party of the bill.. Using the potential votes as the denominator and the actual yea votes as the numerator, we construct two percentages representing the willingness of each member to vote with their party or with the opposition during their respective session of Congress. These two percentages are then laid onto an X/Y plot, as previously mentioned.

Caveats

There are three types of member changes that require manual adjustments: members that changed parties, moved from the House to the Senate, or were classified as Independent. These adjustments mostly pertain to term start and stop dates or ID field updates. Concerning the Independents, because they all caucused with the Democrats, they are classified as Democrats for the purpose of this study. Due to the binary nature of the X/Y plot and the small number of independent members, the only other viable option would be to cut them out entirely. The members' decision to caucus with Democrats serves as enough support to include them as Democrats.

Despite this data-cleaning phase, some members' voting patterns do not line up with their tenure. For instance, Ted Kennedy passed away early into his term, but his term completion date in the congress-legislators repository is marked

⁴³ Jeffrey B. Lewis et al., "Voteview: Congressional Roll-Call Votes Database," 2022, https://voteview.com/.

⁴⁴ ProPublica Data Store, "U.S. Congress: Bulk Data on Bills," text/html, ProPublica Data Store (Pro-Publica Data Store, August 30, 2017), https://www.propublica.org/datastore/, https://www.propublica.org/datastore/dataset/congressional-data-bulk-legislation-bills.

 $^{45\ \ &}quot;Congress-Legislators,"\ Python\ (2012;\ repr.,\ @united states,\ 2022),\ https://github.com/united states/congress-legislators.$

as a full two years. 46 These aberrant members are considered outliers and are removed if outside three standard deviations from the mean on either the X or Y axis. This process removed a total of 23 Congress members.

There are many types of "nays" and "yeas" within Congress. Our metrics are only concerned with generic support or lack of support for a bill, so the various nays and yeas were standardized. "Present" and "Not Voting" votes are considered nay as they did not support the passage of the bill.⁴⁷ There are also many different types of bills, although the types are mirrored between the chambers. Some roll-call votes are not associated with bill numbers. These are mostly procedural, so they are not included here. The roll-call types that are kept are those that require a signature from the President (Bills and Joint Resolutions).

Findings

Due to the previously discussed and varied nature of each chamber, the findings are broken down individually. Overall, our findings reflect the centralization of the House and a growing polarization and marginalization of the minority party in the Senate.

We advise caution in reviewing the visualizations that follow: The bills during these two Congresses were not reviewed for partisan leanings beyond their initial sponsorship, and changes along the axis do not necessarily indicate shifts in ideological viewpoints of Congress members. The House, in particular, can be deceptive due to the significant power of the Speaker, controlling which bills make the floor and often only allowing bills where the vote is not contentious. Although it is tempting to assume that the Speaker represents the general will of the majority (and assumedly the average ideology), there are many external factors at play. For instance, Snyder and Groseclose investigate the role of party leadership on roll-call voting, particularly between votes that are and are not close. Their findings indicate that party leadership can influence the decision-making of the average Congress member significantly, 49 hence presenting a reverse causality problem for our study, which should be further investigated.

House

The 97th and 111th Houses were controlled by Democrats by a margin of several dozen, so Majority (Maj) will refer to Democrat bills, and Minority (Min) will refer to Republican bills.⁵⁰

Centralization

On first observation (Figure 1 & Figure 2), it is obvious that the 111th Congress sees a much higher degree of centralization both among the majority and the minority. This centralization effect is observed with the use of F-Stats in Figure 3 & Figure 5. Specifically, the standard deviations for both the majority and minority

^{46 &}quot;Congress-Legislators."

^{47 &}quot;Voteview | Data - Members' Votes," accessed January 20, 2022, https://voteview.com/articles/data_help_votes.

^{48 &}quot;Bills & Resolutions | House Gov," accessed January 20, 2022, https://www.house.gov/the-house-explained/the-legislative-process/bills-resolutions.

⁴⁹ James M. Snyder and Tim Groseclose. "Estimating Party Influence in Congressional Roll-Call Voting." American Journal of Political Science 44, no. 2 (2000): 193–211. https://doi.org/10.2307/2669305.

^{50 &}quot;Congress-Legislators."

reduce by a statistically significant (α =0.05) margin. This indicates that Congress members in the 97th were more able and/or willing to vote away from their party's political center than the 111th. Given the House's trend towards centralization of power around the Speaker, this could also indicate that Speaker O'Neill did not have the same level of control that 111th Speaker Pelosi enjoyed.

Averages

Curiously, we see a strong "pro-minority" shift in the voting patterns from the 97th to the 111th by observing the averages in each Congress (Figure 4). In fact, both the majority and minority averages experience a statistically significant increase, α =0.05 and .01, respectively. This data provides an opportunity to discuss why changes in majority or minority percentages do not necessarily represent ideological shifts over Congresses.

The minority percentage increase from the 97th to the 111th is the largest and is interpreted as follows: The 111th Congress members vote yea on Republican (Min) sponsored bills 26 percentage points more than their 97th counterparts. There is no statistical difference between the average percentage of Democrats or Republicans voting for minority bills during the 111th and the 97th (Figure 6 & Figure 7). In fact, this pattern also holds true for the majority percentages in the 97th and 111th. If polarization in the House could be represented through bill sponsorship, we would expect to see significant results between Democrats' and Republicans' average voting habits on bills, particularly in the (post-Gingrich) 111th Congress. The statistical difference between the 97th and 111th is instead indicating the behavior of the whole body, not each party individually.

However, the lack of significance in the 111th House averages (Figure 6) is still insightful. Despite the heightened level of polarization in modern Congresses, we cannot identify a difference between the two parties' average voting habits, regardless of Maj/Min status. This could indicate that Speaker Pelosi had firm control over which bills made the floor and knew their likelihood to pass in advance. The strong "pro-minority" shift in the 111th further supports this theory as Speaker Pelosi was able to utilize her centralized power to guarantee that when minority-led bills hit the floor, they were under controlled circumstances. Effectively, the data indicates that Pelosi was able to partially negate the effects of polarization through her power of bill control.

Party-Specific Variance in the House

Earlier, we discussed the increased centralization observed from the 97th to the 111th House. Breaking this centralization down at a party level reveals further insight into changes between the two Congresses. Beginning with the 97th majority, we observed in Figure 7 & Figure 8 that both Democrats and Republicans share the same variance; the 111th majority, on the other hand, shows a statistically significant difference between the two parties' variances. Overall, the variances in the 111th are tighter than the 97th (regardless of Maj/Min status), and the Democrats are more centralized. This relationship is even more dramatic when considering minority bills. Both the 97th and 111th minority variances are statistically significant at 5%, but curiously the Democrats showed the larger variance in the 97th and the smaller in the 111th. These findings are intriguing as they demonstrate that Democratic Congress members are either less willing to or less able to vote for Republican-led bills. It should also be noted

that the Republicans are in the minority during both Congresses, which may give individual Congress members more freedom to vote ideologically.

Referring again to Figure 6, we see that the difference between average voting percentages has never been statistically significant, regardless of Congress or Majority/Minority status. In the House, the qualifying difference between the two parties (or perhaps Maj/Min status) is found in variances, not averages. In a counterfactual world where the Speaker role does not exist, we might conclude that there are very few differences between the two parties. Their voting averages are functionally identical, and even look very similar despite their different variances. This is surprising given public narratives surrounding polarization and ideological skew and leads us to conclude that the Speaker plays a confounding factor in how Congress members vote.⁵¹ In effect, the Speaker can alter the voting averages as they see fit.

Although this study concludes that centralization of power is more relevant, we cannot entirely exclude party polarization in the House. Causally, it remains unclear whether the smaller party-based variances found in the 111th (Maj and Min) are a result of centralization of power or from partisan polarization. The latter could also use the reduced variances as an argument to imply that each party is more clustered together in the 111th due to party polarization as a whole.

Senate

The Republicans controlled the 97th Senate with a gap of less than ten Senators between the two parties.⁵² When referencing the 97th, Republican bills will be the Majority (97Maj). The 111th was controlled by Democrats with a margin between 16 to 20 Senators, depending on the date. When referencing the 111th, Democrat bills will be the Majority (111Maj).

Centralization in the Minority

The stratification seen between the 97th and 111th Senate is deceptive (Figure 9 & Figure 10). While the 97th Senate's minority (Dem) had 340 bills made the floor, the 111th Senate's minority (Rep) had 5. Since the metrics rely on proportional votes taken by each Congress member, we see the largest possible spread between Senators voting on 111Min bills: 0%-100%. Although this will lead to problematic variances later, it illustrates an increased polarization within the Senate.

Unlike in the House, the Senate majority leader does not have sole determination over which bills hit the floor. The majority leader often recommends which bills move for a "motion to proceed," but crucially, this power rests in the hands of individual Senators. Even if the majority leader begins a motion, it still requires a majority of Senators to agree to the motion for consideration to begin and to travel through Democrat-dominated Senate committees.⁵³

Although we cannot speak causally to the relationship between fewer minority bills and polarization or centralization of power, it is reasonably likely that polarization is significant. Although the Senate majority leader holds considerable power, their ability to be overruled by one member prevents them

⁵¹ Huder, "It's Congress's Fault: How Congress Polarizes America | The Government Affairs Institute." 52 "Congress-Legislators."

^{53 &}quot;The Legislative Process: Calendars and Scheduling (Video)," legislation, accessed February 21, 2022, https://www.congress.gov/legislative-process/calendars-and-scheduling.

from collecting too much.⁵⁴ Additionally, the Senate majority leader in the 111th would require five to nine other Democratic Senators to independently defect from their party for a Republican-sponsored bill to move to the floor for consideration.⁵⁵ Even if the majority leader desired this, their ability to pressure fellow Democrats is limited because of each Senator's power.

Centralization in the hands of the Majority

Unsurprisingly, we find a statistically significant difference between the 97th and 111th minorities (Figure 11 & Figure 12). Although smaller, the difference between the 97th and 111th majorities is also statistically significant at 5%. This comparison is more difficult to interpret due in part to the party switch in the majority from Republicans to Democrats. In any interpretation, care should be paid to whether variance growth observed between the two Senates is due to the switching of the party in the majority. This cannot be proved with the current dataset. Observationally, we can comment on how Senators in the majority choose to vote and how that has changed over time.

We observe that the variance difference between the majority and minority is not statistically significant in the 97th Senate (Figures 11 & Figure 13), implying that Senators chose similar levels of voting practices or were afforded similar freedoms regardless of the party sponsorship of the bill. Given each Senator's power, it is reasonable to assume that each party had similar levels of voting variance in the 97th because of the individual choices of Congress members, not the overarching power of the majority leader. Although we cannot effectively compare the variance difference between the 111th majority and minority (due to the limited minority bills), we still see a significant rise in majority party variance from the 97th to 111th (Figure 12). This implies that both parties were more willing to vote away from the majority average in recent years, further supporting our hypothesis of individualistic polarization within the Senate.

Averages

The homogeneity in the 97th Senate majority and minority variances extends to comparisons between the majority and minority averages. As seen in Figure 14, the difference between the average likelihood to vote on majority and minority bills is not statistically significant (p-value = .7114), which implies that the Maj/Min bill status did not impact the overall voting patterns of Senators during the 97th. Surprisingly, this pattern continues into the 111th Maj/Min average comparisons despite the extreme variance observed in the minority percentages. The 111th difference in averages is not significant, but it is considerably closer (p-value = .0735). Despite presumed increases in polarization from the 97th to 111th Senate, we do not see a statistically significant gap between willingness to vote yea on majority versus minority bills. Because of this lack of significance and the known large variances, we feel the Senate cannot use the majority and minority averages to describe the overall voting patterns of the chamber. The overall Maj/Min averages effectively erase party polarization in the 111th Senate. Later, we will review the averages from a party-specific perspective to discuss where the polarization lies.

We also check how majority and minority averages change between the

⁵⁴ Lee, "How Party Polarization Affects Governance," 269.

^{55 &}quot;Congress-Legislators."

97th and 111th Senates. As previously stated, the majority party shifted between the two Senates, so a direct comparison should be approached cautiously.⁵⁶ The majority did not see a statistically significant change (p-value = .8493) between the two Senates, but the minority came very close (p-value = .0524). Using the majority as an example, we interpret this as follows: The 97th Senators voted with majority-sponsored (Rep) bills 55.76% of the time, and the 111th Senators voted with the majority (Dem) 57.10% of the time, which resulted in no statistically significant difference at 5%. Given how bills move to the floor in the Senate (majority vote), it is logical to find that both majorities are greater than 50%.

The minority shows a "significant" change from the 97th to 111th, which the z-test will not capture. In the 97th, the Senate voted with the minority 58.36% of the time, but during the 111th, the minority received a yea 44.89% of the time. This change shows that although 51 Senators in the 111th were willing to move Republican bills to the floor (of which there were five), considerably fewer were willing to vote yea on them. It is tempting to claim this disparity is because Democratic Senators act differently when given power, but the data cannot support that conclusion. Considering some Democratic Senators were required to get five Republican bills to the floor, it is more likely that they were "moderate" or compromise bills from the start.⁵⁷ Unlike in the House, no single authority can guarantee a minority bill's passage once it makes it to the floor.⁵⁸ On average, these five republican bills died on the floor due to each Senator's enhanced agency.

Overall, this reveals a significant breakdown of willingness to collaborate with the minority. In the 97th, minority bills received more yeas than majority bills and could boast a greater than 50% year rate. In the 111th, minority bills did not make it above 45%, and were also severely limited.

Party-Specific Averages and Variances in the Senate

As mentioned above, the overall Maj/Min averages presented in Figure 14 lead us to believe that there is neither a fundamental difference between the voting patterns of the 97th and 111th Senate nor a fundamental difference on majority or minority bills. In Figure 7 & Figure 15, we further break down the votes along party lines. As expected, we see that the 111th majority and minority have a statistically significant difference based on party lines.

Beginning with the 111th minority, we observe a massive spread between the average Democrat yea rate and the Republican yea rate. In Figure 13, we discussed the large variance exhibited in the 111th minority overall. However, the stark placement of each party's average belies that the variance is not only from a low number of possible minority bills. The variances for the Democrats and Republicans in the 111th minority were almost identical (Figure 16), so both parties' minority averages played a direct role in creating the overall minority variance. Put plainly, despite the limited number of Republican bills in the 111th, there is a statistically significant difference in Democratic and Republican voting patterns. As previously mentioned, Democratic Senators were needed to move these bills to the floor for discussion. Despite this, Democrats still overwhelmingly voted against these bills.⁵⁹

^{56 &}quot;Congress-Legislators."

^{57 &}quot;Congress-Legislators."

^{58 &}quot;The Legislative Process."

^{59 &}quot;Congress-Legislators."

The 111th majority also indicates a statistically significant difference between the Democratic and Republican vote, although the gap is not nearly as wide as in the minority. We suspect this is due to the sixty-Senator cloture threshold and the power it lends to the minority.⁶⁰ Although Democrats temporarily controlled 60 Senators, it was short-lived; they often needed at least a few Republicans to guarantee the clean passage of a bill. ⁶¹ During the 111th Senate, the use of the filibuster was on the rise, likely leading to more moderate bills that would gain Republican approval.⁶² These bills seem to have attracted more than just one or two Republicans and may have allowed more moderate Democrats to vote less with the majority. This observation is given further weight in Figure 16, where Democrats' variance was higher than Republicans' variance to a statistically significant degree. Figure 10 shows several Republicans willing to approach the Democrat majority fraction (61.18%) but also two Democrats willing to vote against their party even more than the Republicans, thus widening the Dem variance considerably.

We see a reversal from the 111th majority in the 97th majority variance comparison (Figure 16). Although the 97th majority variance is statistically significant when comparing the two parties, it shows that the minority party (Democrats) had a higher variance than the majority party (Republicans). To complement this, the 97th majority party average (Figure 15) is not found to be statistically significant, indicating that both Democrats and Republicans voted similarly on Republican-led bills. Based on our analysis, the minority party having the higher variance (on majority bills) indicates a greater level of minority party freedom to vote ideologically without suffering political consequences.

Conclusion

Centralization in the House

There's a reduction in the variance of Congress members' voting patterns in both the majority and minority from the 97th to 111th House of Representatives. These same variance reductions remain true if broken down on a party level. For instance, the level of variance by Republican members on majority bills from the 97th to the 111th decreased. Democratic vote variance decreased by larger margins than Republicans across the majority and minority; in both instances, Democrats held the majority. Democrats are either less willing to or less able to vote away from their party average on both majority and minority-led bills. This might imply that the minority in the House has more freedom to vote ideologically than the majority does in modern Congresses.

The House Speaker plays an outsized role that confounds analysis on combined House member voting records, both qualitatively and quantitatively. Over several decades, the role of the Speaker has become more important, both within Congress and outside the walls of the Capitol. The Speaker essentially determines which legislature will be voted on, when it will be voted on, how successful a vote will be, and in-large-part controls the public agenda of the majority party on a national level. These qualitative findings are also found when observing voting patterns of House members based on bill sponsorship. There is no statistical difference between majority or minority voting averages of Democrats and

⁶⁰ Lee, "How Party Polarization Affects Governance," 269-70.

^{61 &}quot;Congress-Legislators."

⁶² Lee, "How Party Polarization Affects Governance," 269-70.

Republicans despite public awareness of polarization on the rise. As mentioned above, voting variances are also decreasing across both parties. Because variances are decreasing and averages remain remarkably similar, we can conclude that the Speaker effectively controls polarization in the House. If the variances were increasing or the averages were significantly different, we could conclude that polarization is outside of the Speaker's control.

Polarization in the Senate

The Senate saw a precipitous reduction of minority-sponsored bills, plummeting from several hundred in the 97th to just five in the 111th. Because bills require 51 votes to make it to the Senate floor, it is more likely that the overall polarization of individual Senators prevented minority bills than the Senate majority leader. The low number of 111th minority bills makes variance comparisons to 97th minority bills very difficult outside of a party-specific perspective. Overall, average comparisons do not result in significant differences, but two come very close: The difference between the 111th Maj and 111th Min averages and the difference between the 97th and 111th minorities. The latter reveals a collapse of inter-party relationships around minority-led bills because although 51 Senators were willing to move the five 111th minority-led bills forward, those bills received a yea vote less than 45% of the time after the discussion period.

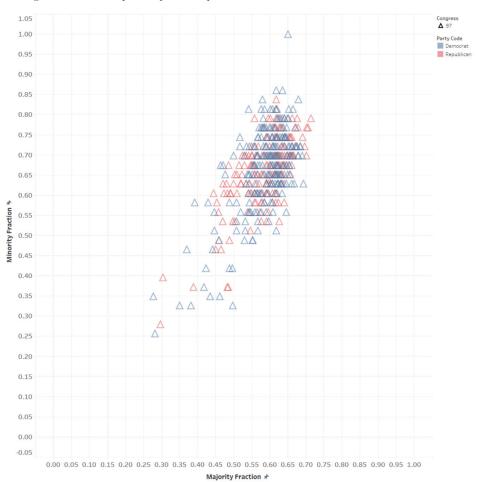
The Senate suffers from increased levels of polarization that become visible when observing the voting averages and variances at a party level. Unlike in the 97th Senate, both the 111th majority and minority are statistically different from each other. Even though the pool of minority bills is low, the difference between Republican and Democratic voting patterns on those bills belies a strong polarization. The majority voting averages are much closer; we suspect this is because of the increased use of the filibuster within the Senate. Moderate Democrats and Republicans in the 111th benefited from a higher threshold to pass bills and the increased use of the filibuster, which empowered them to bring party members closer together. Party-level variance comparisons strengthen the argument for polarization. The majority party in the 97th and 111th had higher levels of variance than the minority party as some majority members could flex to minority-held positions. The minority party variance comparison is not statistically significant in the 111th, which illustrates that both parties caused high levels of variance within the 111th minority. On some levels, this is unsurprising because reduced bill counts will increase variance, but critically, the party-level averages in the 111th minority are also statistically significant. These conditions are symptoms of a neutered Senate minority in the 111th, leading us to conclude that the Senate is strongly polarized.

Overall, bill sponsorship is a strong indicator that polarization was rising within Congress between the 97th and 111th. However, the polarization within each chamber takes two forms: Centralization of power by the Speaker of the House and traditional individual partisan polarization within the Senate. Each chamber struggles with who controls power. In the House, the Speaker controls most aspects of bill-making. The most moderate Senators in the Senate control an outsized amount of power. These tools are not new, but they are newly utilized.

This paper does not offer one metric to causally point to this polarization, but we hope that it can lead to further analysis of power and polarization within Congress. In the future, we would like to continue this exploratory analysis to reach all Congresses where data is readily available. With additional examples, causal conclusions might be reachable. Additionally, locating specific Congress members along the X/Y axes and comparing them to other contemporary members could prove fruitful.

Appendix

Figure 1: 97th House Sponsorship Vote Comparison



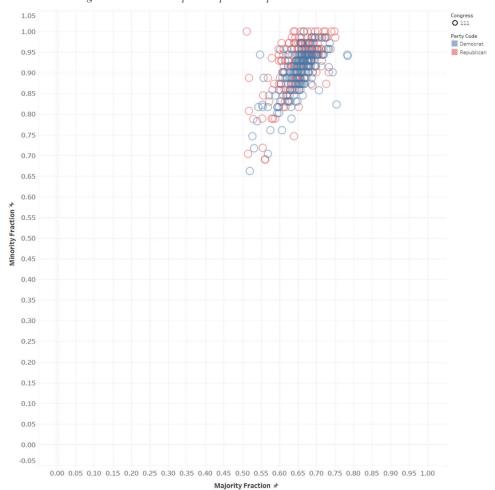


Figure 2: 111th House Sponsorship Vote Comparison

Figure 3: House Baseline Statistics

	Unique Members*	Majority Avg	Minority Avg	Maj Standard Deviation	Min Std Dev
97th House	433	58.68%	66.30%	6.64%	9.81%
111th House	438	65.49%	91.31%	4.29%	5.67%

^{*} Remaining members after the removal of outliers and counting replacement members given natural mid-session turnover.

Figure 4: House Population Proportion Comparisons

	97th Average	111th Average	P-Value
Majority	58.68%	65.49%	.0385*
Minority	66.30%	91.31%	<.00001**

^{*} Statistically significant at α =0.05.

^{**} Statistically significant at α =0.01.

Figure 5: House F-Stat Comparisons

	97th Variance	111th Variance	Rejection Region	F-Stat
Majority	0.44%	0.18%	F<.828 or F>1.205	2.444*
Minority	0.96%	0.32%	F<.828 or F>1.205	3*

^{*} Statistically significant at α=0.05.

Figure 6: House Proportion Comparison by Party

	Democrat Vote	Republican Vote	P-Value
97th Majority	58.76%	58.57%	.9681
111th Majority	65.67%	65.23%	.9203
97th Minority	66.35%	66.23%	.9761
111th Minority	90.68%	92.24%	.5687

^{*} Statistically significant at α =0.05.

Figure 7: Chamber Breakdown by Party

	Democrats	Republicans
97th House	242	191
111th House	261	177
97th Senate	47	53
111th Senate	64	44

Figure 8: House Variance Comparison by Party

	Democrat Variance	Republican Variance	Rejection Region	F-Stat
97th Majority	.44%	.44%	F<.765 or F>1.312	1
111th Majority	.15%	.23%	F<.765 or F>1.316	.652*
97th Minority	1.12%	.76%	F<.765 or F>1.312	1.474*
111th Minority	.25%	.42%	F<.765 or F>1.316	.595*

^{*} Statistically significant at α =0.05.

1.05 Congress **A** 97 1.00 Party Code
Democrat
Republican 0.95 0.85 0.80 0.75 0.60 Minority Fraction * 0.55 0.50 0.45 0.40 0.35 0.30 0.20 0.15 0.10 0.05 0.00 -0.05

Figure 9: 97th Senate Sponsorship Vote Comparison

 $0.00 \ \ 0.05 \ \ 0.10 \ \ 0.15 \ \ 0.20 \ \ 0.25 \ \ 0.30 \ \ 0.35 \ \ 0.40 \ \ 0.45 \ \ 0.50 \ \ 0.55 \ \ 0.60 \ \ 0.65 \ \ 0.70 \ \ 0.75 \ \ 0.80 \ \ 0.85 \ \ 0.90 \ \ 0.95 \ \ 1.00$

Figure 10: 111th Senate Sponsorship Vote Comparison

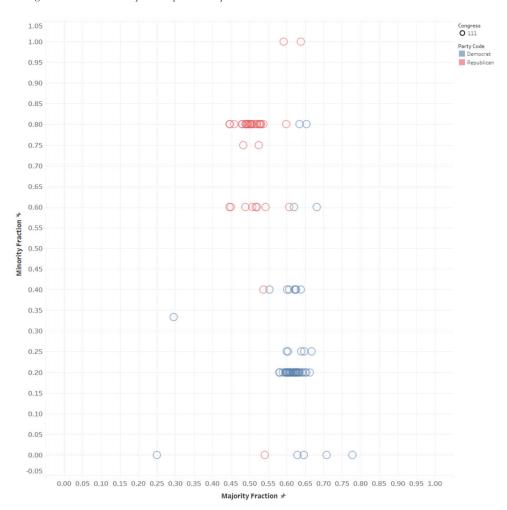


Figure 11: Senate Baseline Statistics

	Unique Members*	Majority Avg	Minority Avg	Maj Standard Deviation	Min Std Dev
97th Senate	100	55.76%	58.36%	4.95%	4.81%
111th Senate	108	57.10%	44.89%	7.71%	28.91%

^{*} Remaining members after the removal of outliers and counting replacement members given natural mid-session turnover.

Figure 12: Senate F-Stat Maj/Min Comparisons

	97th Variance	111th Variance	Rejection Region	F-Stat
Majority	0.25%	0.59%	F<.677 or F>1.473	.424*
Minority	0.23%	8.36%	F<.677 or F>1.473	.028*

^{*} Statistically significant at α =0.05.

Figure 13: Senate F-Stat 97th/111th Comparisons

	Majority Variance	Minority Variance	Rejection Region	F-Stat
97th Congress	0.25%	0.23%	F<.673 or F>1.486	1.087
111th Congress	0.59%	8.36%	F<.683 or F>1.464	7.057*

^{*} Statistically significant at α =0.05.

Figure 14: Senate Population Proportion Comparisons

	97th Average	111th Average	
Majority	55.76%	57.10%	.8493
Minority	58.36%	44.89%	.0524
	.7114	.0735	P-Value

Figure 15: Senate Proportion Comparison by Party

	Democrat Vote	Republican Vote	P-Value
97th Majority	56.29%	55.29%	.8337
111th Majority	61.18%	51.15%	.0375*
97th Minority	55.96%	60.48%	.3421
111th Minority	24.66%	74.32%	.00001**

^{*} Statistically significant at α =0.05.

Figure 16: Senate Variance Comparison by Party

	Democrat Variance	Republican Variance	Rejection Region	F-Stat
97th Majority	.30%	.14%	F<.564 or F>1.755	2.143*
111th Majority	.48%	.16%	F<.583 or F>1.767	3*
97th Minority	.14%	.22%	F<.564 or F>1.755	.636
111th Minority	2.30%	2.47%	F<.583 or F>1.767	.931

^{*} Statistically significant at α =0.05.

^{**} Statistically significant at α =0.01.

The Racial Wealth Gap

How centuries of racism and ongoing discrimination in education, the workforce, and healthcare continue to harm **Black Americans**

By Apurv Singh, Davis Craig, Eviana Barnes, and Liv Perfetti

I. Introduction

The abundance of valuable resources or assets, referred to as wealth, includes tangible assets like money, property, and material possessions, as well as intangible assets such as knowledge, skills, social networks, and reputation. This memo seeks to address America's racial wealth gap, which has been shaped by three centuries of slavery, stolen land, segregation, incarceration, and discriminatory policies across various sectors. We call on policymakers to enact bold, comprehensive policies aimed at closing the racial wealth gap and compensating Black Americans for the lasting impact of these historical injustices.

II. Analysis of the racial wealth gap **History**

Racial justice activist Kimberly Jones effectively illustrates the racial wealth gap through a Monopoly metaphor. She describes a scenario where one not only has to sit out 400 rounds of Monopoly but must also play and generate wealth for their opponent. Grasping the magnitude of 400 years of oppression is challenging, and it is this limitation among others that has slowed down the implementation of the necessary corrective actions, such as reparations. Since the arrival of enslaved Africans in Point Comfort, Virginia in 1619, a distinct set of rules has governed the treatment of Whites and Blacks in the United States. The following section briefly delves into African American history, focusing on the wealth gap from 1619 to the 1980s.

From 1619 to 1865, slavery not only persisted but was also codified into the laws of the United States. For 265 years, slavery served as the driving force behind the Southern agricultural and Northern textile industries. As the tobacco industry dwindled, the invention of the cotton gin ushered in a cotton boom in the South. Although the African Slave trade was prohibited in 1808, the domestic trade thrived, and the enslaved population tripled over the next 50 years. By 1840, Southern cotton was worth more than all other exports combined and accounted for two-thirds of the world's cotton supply. Concurrently, the Indian Removal Act led to the forced relocation of Native American tribes west of the Mississippi River. Additionally, the Treaty of Guadalupe Hidalgo saw Mexico cede 55 percent of its territory to the United States, including present-day California, Nevada, Utah, New Mexico, and most of Arizona and Colorado.

Upon the conclusion of the Civil War, Black Americans were promised 40 acres and a mule by Union General William T. Sherman in Special Field Order 15. This property was to be confiscated from Southern slaveholders. However, President Andrew Johnson overturned the order and returned the land to the former slave owners. According to some estimates, the value of 40 acres and a mule today is approximately \$640 billion. When Northern troops withdrew from the South, the backlash against Black Americans was severe. Despite the 15th Amendment's guarantee that the right to vote would not be restricted based on skin color, the South introduced land ownership requirements, poll taxes, and literacy tests that swiftly undermined African American voting rights. Moreover, violent white supremacists terrorized Black individuals; between 1865 and 1950, an Equal Justice Report documented over 4,400 lynchings of Black people. During this period, segregation was enforced, and resources were disproportionately allocated. By 1870, the wealth gap stood at 23 to 1.

By the time WWII unfolded, the United States had firmly entered the Jim Crow era, characterized by the pervasive ideology of white supremacy. African Americans were deemed undeserving of voting rights. Jim Crow laws enforced segregation and unequal standards across various aspects of society, including legal, health, and occupational domains. Although the GI Bill for returning soldiers did not explicitly exclude African Americans, its structure effectively barred 1.2 million Black veterans. The GI Bill guaranteed low-interest rate mortgages for veterans; however, these loans were administered by white-run financial institutions, which could freely deny mortgages to Black applicants. This issue was exacerbated by redlining and the establishment of white suburbs that excluded Black residents. Additionally, Black Americans faced barriers to higher education, as they were still prohibited from attending Southern colleges and Northern institutions were slow to admit them. The VA even encouraged Black Americans to pursue vocational training instead of university degrees. 10

The Civil Rights era of the 1960s marked significant progress in racial inclusion, driven by legal victories, strategic organizing, and dedicated movement building. These efforts led to substantial changes in American social norms around race and inspired other movements for social justice. Legal victories, such as Brown v. Board of Education, the Civil Rights Act, the Voting Rights Act, and the Fair Housing Act, collectively outlawed racial segregation and discrimination in various aspects of American life. This resulted in decreased social acceptability of explicit discrimination and racial intolerance. Consequently, this period witnessed the fastest wealth convergence since 1900, with the wealth gap shrinking from 8 to 1 in 1960 to 5 to 1 in 1980.

However, since 1980, the convergence has stalled and even begun to widen again. The higher average income growth for Black Americans compared to White Americans drove this convergence, but over the last forty years, income growth rates have essentially been the same. 14 The reversal in progress has been partly due to capital gains on investments in equities and stocks during this period, which have appreciated five times more than the value of housing. ¹⁵ These gains in equity have largely benefited White Americans, who invest 18% of their wealth into equities, compared to Black Americans who invest 7% of their wealth into equities. 16 Persistent racial disparities in incarceration, wage, and mortality rates today provide evidence of the work that still needs to be done. The racial wealth gap widened back to 6 to 1 in 2019, and policy action is long overdue.¹⁷

Career-Based Factors

Moving forward to analyze more recent data, we see that the racial wealth gap has been widening since the Great Recession. In 1990, the average household wealth aggregated by race was around \$477,716 for white households compared to around \$118,277 for African American households. 18 Fast forward twenty years and the average white household wealth is approximately \$1,126,245 and African American households have barely averaged out to over \$230,395.19

There are numerous career-based factors that contribute to the racial wealth gap, but the three main issues behind it are access to education, incarceration, and the wage gap. Here, we will analyze how these three issues contribute to retirement age and wealth accumulation.

Disadvantaged chances to access educational resources for students of color begin as early as preschool. Even with controlling for variables like test scores, schools, socio-economic status, and health, young students of color are less likely to be referred to gifted programs. ²⁰ Children of color are exposed to stereotypes like, "Black students don't do well on standardized tests." The psychological damage of exclusion leads to a 13% decrease in African American student SAT scores. 21 Elementary education-aged students of color are also more likely to be suspended or expelled.²² The small likelihood of referral to gifted programs, paired with the higher likelihood of facing strong disciplinary action, intersect and reinforce each other to hinder the social-emotional and behavioral development of students of color. The intersection also limits educational experience, increases the likelihood of undiagnosed underlying issues, and creates stress for the entire family.²³ Moving forward into secondary and higher education, wealthier families are inherently able to provide more opportunities for their children that can play a role in their long-term career success. Families with more disposable income are able to switch school districts, enroll their children in test preparation activities, and complete tuition payments at a much greater capacity than low-income families.24

The idea of affirmative action was created in the early 1960s to provide a more inclusive workspace and educational atmosphere for people of color through representation policies. By 1969, the representation of African American students at the collegiate level doubled.²⁵ Once admitted, data supports that low-income students complete their degrees at higher rates.²⁶ Higher education access for people of color is on fragile ground with the prospective affirmative action overturn proposed by the U.S. Supreme Court. It is predicted that students of color will experience a 23% decline in admissions if the Supreme Court

moves forward with the overturn.²⁷ The court's perspective provides a counterargument of income measurement being sufficient to replace racial considerations in collegiate admissions. Income does not provide a holistic perspective of the disadvantages faced by students of color. While income serves as an indication of the ability to pay expenses, it does not show the whole story of economic well-being and higher education access.²⁸

Though affirmative action has enhanced the inclusivity of minority students in higher education, the wealth gap persists. White college graduates have more than seven times the wealth of their African American college graduate peers. ²⁹ Affirmative action is a necessity to promote equitable admission to higher education. Still, more must be done to address the racial wealth gap that persists when controlling for the level of educational achievement.

Incarceration is the largest contributing factor to the racial wealth gap, estimated to account for 20% of today's gap. 30 36% of African American households have a currently or formerly incarcerated family member, compared to 19% for white households. 31 Being previously incarcerated lowers an individual's predicted lifetime earnings by 52%, and households are estimated to hold about 50% less wealth. 32 Pairing these statistics together and considering the existing wealth gap prior to incarceration shows how detrimental interactions with the criminal justice system are for households of color. In 2019, 29.2% of African American households with a previously incarcerated member reported being unable to pay their bills, 31.5% were denied a loan, and the median household wealth was only \$1,101. 33 In comparison, white household data showed 19.1% unable to pay their bills 18.1% loan denial, and a median wealth of \$15,330. 34

When comparing African American households before and after incarceration, household average wealth falls from \$174,258 to \$68,693 and average assets fall from \$241,571 to \$119,860.35 The associated wealth drop from incarceration for households of color is much more widespread than among white households. This is because households of color are more likely to experience incarceration, with more powerful and detrimental effects post-release, making incarceration a major contributor to the racial wealth gap.

Lastly, it is vital to consider the overall wage gap seen when comparing white workers to their African American counterparts. Controlling for all other variables, African American workers make 14.9% less than white coworkers.³⁶ What is even more concerning, is that this gap has grown nearly 5% in the last 20 years.³⁷ These calculations are consistent across all education levels. Whether having less than a high school education, completing high school, finishing some collegiate classes, graduating from college, or completing an advanced degree, at every level white workers are paid more.³⁸ Data proves that on average a \$10,000 increase in annual wages is associated with a 7% decrease of Black men represented in that occupation.³⁹ That being said, 3.5% of all Black men and 5% of all Black women earn at or below minimum wage.⁴⁰ The relationship between low-wage earners and unemployment creates a poverty trap. Families in the lowest 20th percentile of wage distribution see their incomes fall 2.2% for every 1% increase in unemployment.⁴¹ All of these factors support the data that 24% of African American households live in poverty, compared to 9% of whites.⁴²

All career-based disadvantages affect lifetime earnings, and ultimately retirement. Since African Americans face challenges in access to quality health-care, 40% of Black workers report having to retire early due to health issues. 43

However, they do not have adequate savings to support them, as 56% of African Americans are forced to retire before they turn 61. The average household retirement savings for that age bracket of African Americans is only \$30,000.44 White retirement savings are four times more, with an average of \$120,000 for those ages 55 and up.45

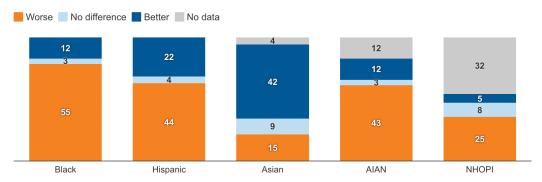
The career-based factors contributing to the racial wealth gap discussed in this report are not exhaustive. Racial wealth gaps are also created through occupational discrimination, discriminatory housing policies, mortgage obtainment, home values, credit scores, the downfall of unionization, police violence, household dynamics, family structures, intergenerational wealth gaps, and healthcare.

Healthcare Implications

One of the most concerning ills of racial wealth disparity is the access to healthcare for marginalized communities. This mainly stems from centuries of systemic racism and a lack of financial resources. Historically marginalized communities have faced significant barriers to having quality healthcare, including limited or no preventive care, mental health services, and routine health screenings. 46 Racial bias further exacerbates the situation, widening the gap in the healthcare outcome between different races.

Health and Health Care among People of Color Compared to White People

NUMBER OF MEASURES FOR WHICH GROUP FARED BETTER, THE SAME, OR WORSE COMPARED TO WHITE PEOPLE:



NOTE: Measures are for the most recent year for which data are available. "Better" or "Worse" indicates a statistically significant difference from White people at the p<0.05 level. No difference indicates no statistically significant difference. "Data limitation" indicates no separate data for a racial/ethnic group, insufficient data for a reliable estimate, or comparisons not possible due to overlapping samples. AIAN refers to American Indian K F F or Alaska Native. NHOPI refers to Native Hawaiian or Other Pacific Islander. Persons of Hispanic origin may be of any race but are categorized as Hispanic for this analysis: other groups are non-Hispanic.

The measures included infant mortality, pregnancy-related deaths, prevalence of chronic conditions, and overall physical and mental health status

Source - https://www.kff.org/racial-equity-and-health-policy/issue-brief-disparities-in-health-and-health-care www.kit.org/raciai-equity-and

Figure 1: Health outcome relative to White People

Poverty's impact on the quality of healthcare access is severe for people of color, mainly Hispanic and Black people, who are several times more likely to experience poverty than Whites. This is usually due to centuries of disparagement and a lack of generational wealth. Figure 1 highlights a recent study by KFF⁴⁷, which reports the stark difference in health outcomes among people of different races compared to whites. This study determines the health outcomes on several critical measures like infant mortality, the prevalence of chronic illness, pregnancy-related deaths, and overall mental/physical health status. Black and Hispanic people had the poorest outcomes, with around 80% and 62% worse health outcomes than White people.

Additionally, interpersonal and systemic racial biases have exacerbated the situation through several preferential treatment practices. Some examples include medical textbooks' disproportionately high representation of White people compared to other races, and courses like Pain Management, where Black people are given lower than required doses of medicine and pain medicines. One of the most famous incidents was the misdiagnosis of Serena Williams's blood clot. During the birth of her daughter, she faced complications. Knowing her family's history of Pulmonary Embolisms, she asked for CT scans. The nurse disregarded her concern, thinking the pain medications confused her. Eventually, the CT scans showed blood clots settled in her lungs, and she survived the near-death experience through self-diagnosis. 48 This incident showed, even for an elite athlete, how difficult it can be to get the medical care that people of care need if they are a person of color. Moreover, it sheds light on America's maternal mortality crisis, where black women are three to four times more likely to die from pregnancy-related complications. 49 Increasing diversity in the Healthcare workforce is one of the most effective ways to mitigate this issue.

Uninsured Rate Among the Nonelderly Population by Race/Ethnicity, 2010-2021

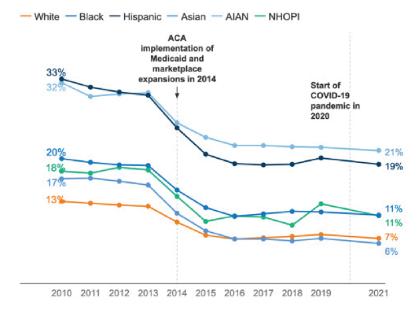


Figure 2: Uninsured rate by race

Health insurance, while being the most significant determinant of quality healthcare in America, is also the largest inhibitor to it. It favors affluent White families while working against minorities lacking intergenerational wealth or high income. Being one of the most expensive healthcare systems in the world, the poor and marginalized end up having the highest uninsured rates in the country.

This severely limits access to medical attention to those who cannot afford it. Figure 2 above shows the highest uninsured rate among Black, AIAN, and Hispanic people.⁵⁰ Medicaid aims to tackle this issue by benefiting minorities with meager incomes. While it is a significant step towards bridging disparities in healthcare access, a few issues hinder its mission. Its eligibility is highly restrictive and is surrounded by bureaucratic and administrative hurdles that make navigating it difficult for many people.⁵¹ Addressing these issues while easing the process can make Medicaid more equitable in providing healthcare access to the underprivileged.

One of the most overlooked effects of racial wealth disparity is its impact on mental health. Being unable to provide for one's family under financial stress often leads to anxiety and depression, potentially developing life-threatening diseases. These diseases can range from heart disease to cancer. Research also shows how stress is linked to inducing autoimmune diseases like Rheumatoid Arthritis and Multiple Sclerosis.52

Making healthcare accessible to everyone, especially those whose health has been undermined for centuries, should be a high-priority national agenda. An inclusive healthcare system is a critical indicator of a country's prosperity and should be pursued with utmost importance. A broader healthy population will be essential to American productivity, economic growth, and happiness.

III. Reparations as a solution to the racial wealth gap

No amount of reparations will make up for the devastating impact of slavery. However, the United States has a collective responsibility to prevent further harm to Black Americans by passing policies that will close today's racial wealth gap. These include anti-discrimination laws as well as policies to reduce inequities in housing, education, employment, and healthcare. In addition to these basic reforms, U.S. policymakers should develop and pass comprehensive reparations for Black Americans.

Reparations have a dual purpose. The first is to close the racial wealth gap, which is evident in the difference between white and Black median household income: \$71,033 for white families compared to \$45,208 for Black families.⁵³ Issuing meaningful reparations could significantly reduce this \$25,825 difference. The second is to provide retroactive compensation to Black Americans for their forced labor and centuries of discrimination including land theft, Jim Crow laws, redlining, exclusion from educational and employment opportunities, healthcare disparities, and unjust criminalization.54

There is a precedent for reparations in the U.S. and globally. The U.S. has contributed some land and money to indigenous peoples, although the amount is minimal given the scale of genocide committed.⁵⁵ The U.S. government gave a total of \$1.5 billion to Japanese-Americans who were forced into internment camps during World War II.56 The U.S. also helped orchestrate and contribute to the Marshall Plan, which provided reparations for Jews after the Holocaust.⁵⁴

Although reparations can come in many forms, they fall into two main types: direct cash payments and social or structural wealth-building opportunities.⁵⁸ Direct cash payments can be given to individuals or families. The amount can be determined by either the current wealth gap or the cumulative cost of slavery and discrimination, which would include the value that was placed on enslaved Black Americans for their forced labor.⁵⁹ Estimates of the former indicate the U.S. would be responsible for paying out a total of \$14 trillion, or about \$350,000 for each eligible Black resident.⁵⁷ Estimates of the latter come out to about \$12-13 trillion total, although this amount is more variable depending on the methods used to calculate it.⁶⁰

Social or structural wealth-building opportunities for Black Americans aim to address specific racial disparities in our society. For example, some groups are advocating for a federal reparations package that mirrors the Harriet Tubman Community Investment Act, introduced to the Maryland General Assembly in 2020 (but not yet passed). ⁶¹ The package addresses inequities in education, housing, business, and healthcare. To help Black students advance in education, the package proposes college tuition benefits, student loan forgiveness, and the continuation of affirmative action. ⁶³ For fairer housing opportunities, the bill suggests assisting Black Americans with down payments for homes and home repairs. ⁶⁴ Finally, to empower Black entrepreneurs, there is a provision for business grants and land grants. ⁶⁵ The NAACP also supports many of these provisions and others, including expanding social security benefits for Black Americans due to healthcare disparities. ⁶⁶

Determining qualifications for reparations is a challenge for policymakers. First, policymakers must decide whether all (or most) Black Americans should be eligible or only descendants of enslaved people. If the former, there is further debate over whether Black Americans should have to prove that they experienced discrimination, and whether income level should be considered. If the latter, proving ancestry from enslaved people is difficult. Some descendants' lineage can be traced through birth certificates and slave manifests, but these lists are not exhaustive.⁶⁷

Because of lacking (or even forged) documentation, the NAACP recommends four criteria that must all be met for a person to receive reparations. First, they must be a U.S. citizen having noted Black heritage on the census; second, they must identify as Black on their birth certificate or have documents showing they are descended from enslaved people; third, they must show parentage residing in the U.S. before and during Jim Crow; fourth, they must currently identify as Black or African American. ⁶⁸ In addition to using birth records and census data, DNA testing could also be used to determine lineage. ⁶⁹

With a divided and often dysfunctional Congress, action on reparations at the federal level is unlikely soon. However, there has been slow progress at the state and local levels. San Francisco recently proposed reparations that include a total of \$5 million distributed to Black residents, among other recommendations. City officials are considering a set of criteria for these reparations, one of which is whether the resident was a victim of the war on drugs. Usupporters believe that funding reparations would help alleviate the impacts of gentrification. The measure passes, San Francisco would be the first major U.S. city to issue reparations. Other cities have taken steps toward progress: Evanston, IL provides reparations in the form of funding for home repairs and property down payments, while Boston has created a task force to study reparations.

Some universities are taking responsibility for their role in perpetuating slavery. Georgetown and Princeton Universities, both of which sold enslaved people and used the money to build their endowments, are giving the descendants of these enslaved people full benefits to receive a degree. To Five Virginia universities are now required by state law to memorialize enslaved Americans who labored on their campuses and provide benefits, in the form of college scholarships or community development programs, to descendants.

IV. Recommendations

Congress should pass comprehensive federal reparations for Black Americans, working with advocacy groups and economists to develop details around types, qualifications, and amounts.

Progress at the state and local levels is encouraging. However, for reparations to be fair and meaningfully address the racial wealth gap, the United States must take action at the federal level. Advocacy groups and experts have spent considerable time and energy developing guidelines for reparations that are fair, far-reaching, and impact-oriented. For example, the Harriet Tubman Community Investment Act introduced in Maryland could be applied at the federal level using the criteria outlined by the NAACP. Congress should take advantage of this expertise.

The federal government should create a system allowing low-income Americans to put pre-tax income towards saving for a home, similar to the Health Savings Account (HSA) program, and provide direct and/or matched contributions for Black families.

If a full and comprehensive solution is politically unfeasible now, Congress should begin passing incremental reparations in the meantime to reduce the wealth gap. For example, Congress may be unwilling to pass direct cash payments, but more targeted forms of reparations could stand a chance. Since a major factor in the racial wealth gap is home ownership, a program that assists Black families in financing a home could be critical. Such a program would also provide broader economic benefits to the nation, which would help elected officials garner the necessary support.

V. Conclusion

Three centuries of slavery, land theft, segregation under Jim Crow laws, unjust criminalization and incarceration, and discriminatory policies involving housing, education, voting, and jobs have put Black Americans at a severe economic disadvantage. This disadvantage is evident in today's racial wealth gap. Policymakers and citizens alike are responsible for even the playing field and closing this gap. Although there is no silver bullet solution to such a deep-rooted and multi-faceted problem, one clear solution exists: reparations. By issuing bold and comprehensive reparations at the federal level, the U.S. can begin to assume accountability for the harm it has caused Black Americans, past and present.

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INTERACTIVE INFOGRAPHIC

Improve Transportation by Reducing Congestion:

Analysis Supporting the Construction of Multimodal Transit Hubs in Pittsburgh, Pennsylvania

Saul Bezner and Michael Rodriguez January 5, 2024

Background

Public transit is generally predictable using service times and rider averages. However, many factors can cause sudden demand increases for transportation, including sporting events, concerts, and natural disasters. These sudden increases add to traffic congestion, putting strain on transportation systems.¹

Transit-Oriented Development (TOD) reduces congestion and increases multimodal transportation thereby reducing system burden.² Transit hubs promote TOD by centralizing several modes of transportation in one area.³ These hubs offer a combination of bus lanes, light rail tracks, bike paths, rideshare spaces, and more. Transit hubs with bikeshare stations, for example, provide short distance transit options that reduce crowding on buses. This is a good alternative for able-bodied commuters traveling relatively short distances, compared to less mobile commuters traveling long distances.

The City of Pittsburgh should construct transit hubs as a means to address growing transportation needs. The next section will take users through an interactive analysis that highlights some of the considerations needed to determine hub locations. If built, these hubs would promote multimodal transportation, which would help reduce congestion and system burden.



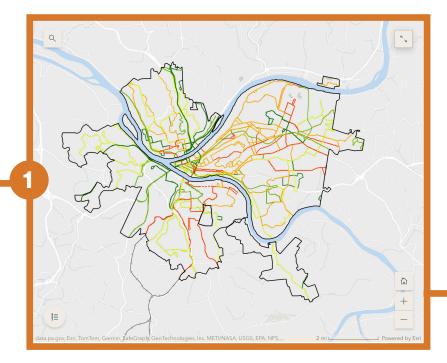
Scan here to access the full interactive website experience

Map Navigation

The next section contains several maps of Pittsburgh and its rivers. ⁴⁵In the interactive website, users can:

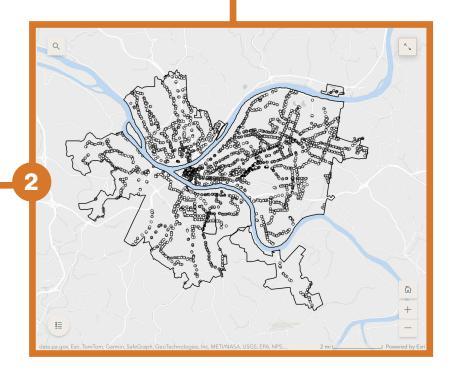
- 1. Read more about the data by clicking on lines and points.
- 2. Expand the map by clicking on the square button in the top-right corner.
- 3. Return to the default map view, Zoom In, and Zoom Out by clicking on the square buttons in the bottom-right corner.
- 4. View the map legend by clicking on the circular button in the bottom-left corner. These legends explain important symbols.
- 5. Search and go to any address by clicking on the square button in the top-left corner.

See page 79 to access the website.



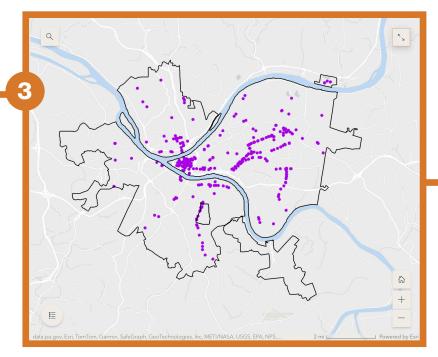
This first map shows Pittsburgh Regional Transit (PRT) routes by average weekday riders. ⁶ Users can also zoom in to see blue lines, showing city sidewalks and their proximity to routes. ⁷ Green lines represent bus and light rail routes with relatively low weekday rider averages. Yellow lines represent routes with moderate weekday rider averages. Finally, orange and red lines represent routes with relatively high weekday rider averages.

These orange and red lines show the main throughways of the city—those routes that play a crucial role in everyday travel for Pittsburgh residents. However, these lines average ridership over long distances. Where do passengers board? Which areas of the city see highest average rider walk-on? This is an important consideration for city planners, for both everyday commuting and periods of sudden demand increase.

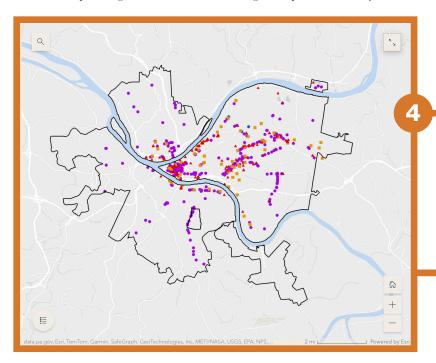


Bus and light rail stops help us understand the spatial distribution of riders. This new map shows graduated grayscale points for every stop in Pittsburgh.⁸ Each of these stops has an associated average of walk-ons per weekday.

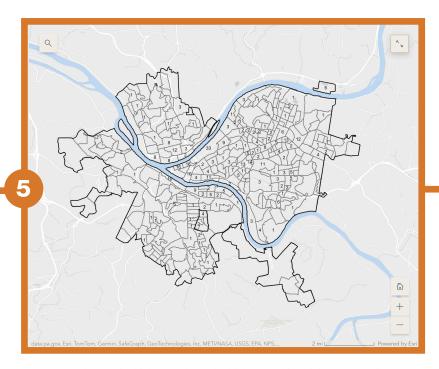
The distribution of average walk-ons is right skewed, meaning the majority of stops have low average walk-ons. This makes sense: many stops service routes that aren't main throughways. To understand which stops have relatively high average walk-ons, we symbolize stops using a geometric interval. Black points represent stops with the highest average walk-ons, or more than 200 persons per weekday.



To see just those stops with high average walk-ons, we select all stops with more than 200 persons and export a new feature layer. This reduces noise in the data and helps us begin to visualize areas with high transportation activity.

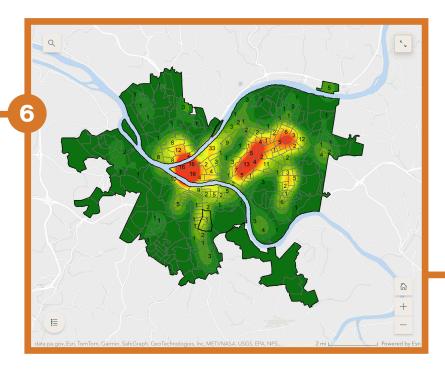


We continue adding points for other forms of transportation in addition to bus and light rail. Red triangles represent electric vehicle charging stations (EV Stations). Orange squares represent POGOH bike share stations (POGOH Stations). Blue circles represent Smart Loading Zones, which reduce congestion by automating delivery processes. Notice, some areas have a much higher density of points, representing higher multimodal transportation activity. Users can zoom in to see sidewalk lines and their proximity to different points of interest.



To understand which areas have the highest multimodal transportation activity, we use the ArcGIS Summarize Within tool. Block groups are more granular than neighborhoods, so we use these as input polygons. ¹² Each form of transportation is then treated as an input summary feature, producing point counts. By taking the sum of these counts, we identify the total point count by block group.

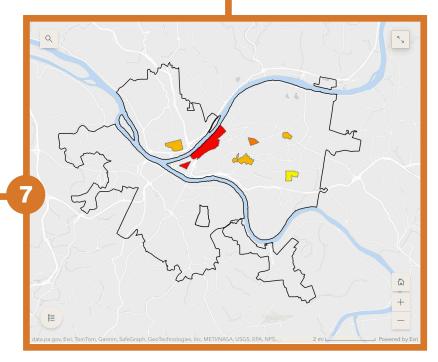
These totals vary considerably from zero to thirty-five points of interest, indicating possible block group candidates for transit hubs. How do we decide which block groups are best?



This heat map is calculated using a kernel density model. Each form of transportation is treated as a point feature and used as an input in a separate kernel density. These kernel densities are then weighted and combined to show an index of transit point density. The map groups values by color gradient, using a standard deviation method and interval size of 1/4 standard deviations. Green-yellow coloring represents "cooler" areas with low to moderate transit density, and orange-red coloring represents "warmer" areas with higher transit density.

By imposing block groups onto the transit index, we see there's more to this story. Some block groups have relatively low point counts, but fall within warm areas, meaning they still have moderate to high transit activity in that area. For example, the block group corresponding to Waterworks Shopping Plaza has a point count of five but a low transit index value of three, compared to a block group in Squirrel Hill South that has a point count of five and a high index value of nine.

Holding all else equal, those block groups with the highest point counts in areas with transit index values of nine or higher are the best candidates for transit hubs.



Note, these candidate block groups are concentrated in the Northside, Downtown, and East End. They are now colored by point-count from lowest (yellow) to highest (red). Users can zoom in to see neighborhood names. ¹³ In ascending order, the seven block groups that are best candidates for transit hubs are:

GeoID Point Count Neighbo		Neighborhood	
420031408002	5	Squirrel Hill South	
420035627002	12	Allegheny Center	
420030708001	13	East Liberty	
420039822001	13	North Oakland	
420030804002	23	Bloomfield	
420030203001	33	Strip District	
420030201003	35	Central Business District	

Conclusion

The City of Pittsburgh should alleviate traffic congestion by building one or several transit hubs in any of the seven recommended block groups. This would reduce burden on PRT routes with high average ridership, improving overall rider experience. In fact, several PRT stops with high average walk-ons service routes that connect these block groups: constructing more than one hub would have a compound effect, alleviating congestion over several areas of the city.

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