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BERKELEY PUBLIC POLICY JOURNAL

Legal Violence Over the Life Course

Algorithms and Child Welfare

Data Sharing in the Healthcare Industry

Mapping Social Climate Vulnerability in California

Community-Based Climate Resilience

Towards a More Centralized Regime of Land Use Regulation

Student Assignment Policy and The Resegregation of San Francisco Schools

...AND AN INTERVIEW WITH RUCKER JOHNSON



EDITORS' NOTE

2020 has been a bitter pill to swallow in more ways than one. From a public policy perspective, it has been a critical year to the extent that it may be remembered as the 21st century's turning point in world history. The year began with the outbreak of the novel coronavirus, which not only shook the globe by claiming over a million lives and crippling the world economy, but also revealed the inadequacies that plague public healthcare and social safety net systems in most major countries. As the year progressed, the racist underpinnings of the American police force and the governments that fund it manifested in the ruthless killings of Breonna Taylor, George Floyd, Rayshard Brooks and other Black Americans. We recognize that the ensuing protests across the country and the racial reckoning these incidents have ignited are highly crucial in subverting institutionalized racism in America. In the thick of these, we were met with devastating wildfires in California and several regions of Australia, rising tensions between the United States and Iran that almost resulted in World War III, and an underwhelming Democratic Primary that exemplified the longstanding regressive outlook of the Democratic National Committee. Nonetheless, as the dreadful U.S. presidential election looms closer, it may be seminal in determining how the U.S. will respond to these intersecting crises for years to come.

We are living through a period of world history when the dialogue around public policy is making a beeline for the center-stage like never before. It is in the spirit of this dialogue and the promise of public policy to conquer the predicaments confronting the global community, that we present the Fall 2020 issue of the Berkeley Public Policy Journal. We are immensely grateful to our talented and committed authors and editors who worked towards this edition in the midst of a disruptive pandemic. We are especially thankful to Professor Rucker Johnson, who made time to interview with us despite his busy schedule at a point when there were many pressing policy issues that required his time and expertise.

Our journal begins with Master of Public Health student Sarah Han's analysis on access to parental healthcare coverage for immigrant mothers in the U.S. — it explores the Health

Equity and Access under the Law (HEAL) Act for Immigrant Women and Families as a policy option for expanding access to comprehensive prenatal care to immigrant mothers. Next, Goldman School MPP graduates Emnet Almedom and Nandita Samath along with Master of Information Management and Systems student Joanne Ma examine the use of algorithm-based risk assessments in the U.S. child welfare system, particularly through the example of the Allegheny Family Screening Tool (AFST). MPP graduate Sofia Jordan writes about data sharing in the healthcare industry and proposes a new, inter-agency regulatory model towards safeguarding fundamental patient rights. Then, MPP graduate Kelly Armijo suggests an innovative way to map social climate vulnerability in California by combining social and climate vulnerability indices. MPP graduate Irene Farnsworth and Master of Development Practice graduate Natasha Mehta emphasize best practices in community-based climate resiliency programs and identify opportunities for the California labor movement for building climate resilience. Next, MPP graduate Edwin Sun explores alternative models of governance for surplus agency land in California and argues that a centralized regime of land regulation is more effective in overturning exclusionary housing policies than local governments. MPP student Elena Rein analyzes San Francisco Unified School District (SFUSD) student assignment policy changes since the 1980s and shifts in school demographics since 1993. She asserts that SFUSD should reinstitute the use of race in student assignment policies by borrowing a tried and tested strategy from a neighboring district. Finally, BPPJ editors Liliane Nienstadt, Daniel Morales Campos, and Reyna McKinnon interview Goldman School Professor Rucker Johnson on his latest book *Children of the Dream: Why School Integration Works* and promising strategies to break the cycle of poverty for marginalized youth in the U.S.

As we publish this edition at a time of grief, fury, and solidarity, we hope that these analyses will help pave the way for identifying policy solutions that are rooted in evidence and empathy.

— Reyna McKinnon & Sana Satpathy

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LEGAL VIOLENCE OVER THE LIFE COURSE

by Sarah Han



LEGAL VIOLENCE OVER THE LIFE COURSE

ADDRESSING THE LACK OF PRENATAL HEALTHCARE COVERAGE FOR IMMIGRANT MOTHERS

SARAH HAN

Edited by: Daniel Morales Campos & Reyna McKinnon

While legal, structural violence toward immigrant populations pervades throughout U.S. history, the Trump Administration has caused unprecedented levels of harm to immigrants through its racist public rhetoric and policy actions over the past four years. Now more than ever, it is vital to examine how the rights of immigrant populations can be protected and their health can be promoted. Access to prenatal care is a vital protective factor that has compounding impacts on health for both parents and children. Using a Life Course Theory perspective, this article outlines how barring both undocumented and legally present immigrant mothers and parents from comprehensive prenatal care is an egregious form of legal violence. It also explores potential federal policy options for expanding access to comprehensive prenatal care to both undocumented and legally present immigrant mothers and parents. In particular, the Health Equity and Access under the Law (HEAL) Act for Immigrant Women and Families presents a unique and innovative policy strategy by redefining immigration law directly, rather than reforming healthcare.

LEGAL VIOLENCE AND LIFE COURSE THEORY

Legal violence is defined as policies that legitimize and give rise to practices that harm both legal and undocumented immigrants "physically, economically, psychologically, or emotionally"¹ and normalize these injustices under the thin guise of protecting the public.² Dr. Cecilia Menjívar and Dr. Leisy Abrego coined the term in 2011 to describe the way that "the current system separates families, blocks access to dire social services, and harms documented, undocumented, and liminally legal Latina mothers alike," based on ethnographic studies they conducted between 1998 and 2010 with Guatemalan, Mexican, and Salvadoran im-

migrant mothers and their children.¹ While legal violence against the immigrant community has pervaded throughout U.S. history, over the past four years, the Trump Administration has caused unprecedented levels of harm to immigrant communities through its racist public rhetoric and policy actions.

In September 2017, President Trump announced the phase-out of the Deferred Action for Childhood Arrivals (DACA) program, making undocumented youth vulnerable to deportation and barring them from obtaining work authorizations.³⁻⁵ In April 2018, he enacted a "zero tolerance policy" creating a crisis of separated and detained migrant families and children.^{6,7}

In August 2019, large-scale raids conducted by Immigration and Customs Enforcement in several states upended entire communities.⁸ In February of 2020, the Trump administration implemented a rule change that has forced people to choose between accessing vital services – such as Section 8 housing assistance or SNAP, the Supplemental Nutrition Assistance Program – and renewing their application for permanent residence or visas.⁹

This amendment to the “public charge” policy has caused a chilling effect, as immigrants forego services for which they are still eligible.¹⁰ Most recently, the Trump administration has

conspicuously left out any support for immigrants and their families in navigating the COVID-19 pandemic in the Coronavirus Aid, Relief, and Economic Security (CARES) Act,¹¹ while qualifying citizens each received a \$1,200 advance in tax credits, despite the facts that immigrant communities contribute tax dollars and make up much of the essential domestic, agricultural, and food workforce¹² and are therefore particularly vulnerable to the disease. Further, health advocates are concerned that undocumented immigrants would be deterred from seeking healthcare because of the chilling effect caused by Trump’s restrictive “public charge” policy and a fear of being reported to ICE.^{13,14} This not only risks their health and their lives, but also obstructs opportunities to contain the spread of COVID-19.

Each new policy attack by the Trump administration creates a new public health crisis as this legal violence directly impacts

immigrant health¹⁵ with compounding effects over the life course.¹⁶ Life Course Theory posits that health in adulthood is determined by health in pregnancy, early childhood, and adolescence and emphasizes the importance of how social, cultural, and economic factors, in addition to biological and genetic characteristics, can threaten or promote one’s health.^{16,17} Another central tenet of Life Course Theory asserts that

Life Course Theory examines the way that these risk and protective factors have greater impacts during specific critical periods in life than in others.

underrepresented minority populations, like low-income immigrant women and children, are particularly susceptible to these risk and protective factors.^{16,17} Life Course Theory examines the way that these

risk and protective factors have greater impacts during specific critical periods in life — such as preconception, the prenatal and postpartum periods, childhood, and adolescence — than in others.^{16,17} Simply put, the health of a pregnant woman or a newborn is more vulnerable and more consequential than that of an adult in their 30s, 40s, or 50s. Life Course Theory also prompts discussion of intergenerational effects of risk and protective factors: the way in which access to wealth, education, social networks, and other resources can contribute to better health in subsequent generations within a family.^{16,17}

By identifying key risk and protective factors, critical periods of life, and highly vulnerable communities, Life Course Theory helps us understand how to more effectively and efficiently disrupt inequities in the health system. For low-income immigrants living in the U.S., policies that restrict access to essential health and social

services, fair employment, education, and legal recourse¹⁸ make immigrants "vulnerable to different forms of abuse."¹⁹ These are structural risk factors that define the social, economic, cultural, and political landscape they must navigate. In other words, this legal violence perpetuates health inequities by directly undermining the social determinants of health for an entire class of people,¹⁵ with women and children bearing the greatest burden of risk and harm.

THE CASE FOR PRENATAL CARE

Through this public health lens, we can see that one of the most egregious and harmful forms of legal violence actually precedes the Trump Administration by decades: the denial of access to prenatal care for immigrants. Neither legally present immigrants in their first five years of residing in the U.S. nor undocumented immigrants can access federally sponsored, non-emergency healthcare.¹⁸ While the 2014 expansion of the Affordable Care Act (ACA) of 2010 has made slight improvements in immigrant healthcare coverage¹⁹ and several states have opted to cover some income-eligible non-citizen pregnant women,^{20,21} this coverage still falls short. In states that have failed to opt in to providing healthcare coverage to immigrants, the only form of public health care that immigrants are allowed to use is Emergency Medicaid, which only covers life-threatening events and obstetric admissions.^{22,23} Estimates from North Carolina and Oregon show that greater than 80 percent of Emergency Medicaid claims are obstetrics cases,²² which provides compelling evidence that there is great need for comprehensive healthcare coverage among pregnant noncitizen immigrant women. Policy barriers to immigrant healthcare coverage are also reinforced through

state-specific policies. For example, in 2010 after Arizona passed SB 1070, enabling police to detain individuals who were not able to prove their citizenship, researchers found a significant decrease in young immigrant women and mothers accessing basic social services for themselves and their infants.²⁴ As a result of these policies, 32 percent of the 6.3 million immigrant women of reproductive age living in the U.S. were uninsured in 2016, compared to nine percent of their U.S. citizen counterparts.²⁵ This inequity is even more striking in low-income populations: 48 percent of noncitizen immigrant women of reproductive age in the U.S. were uninsured in 2016, compared to 16 percent of U.S. born women (See Figure 1).²⁵

According to the American College of Obstetrics and Gynecology, prenatal care can help ensure and promote the health of both mothers and children by providing important counseling and resources, screening for risk factors like alcohol or drug use, hypertension, or diabetes, and preventing complications such as pre-eclampsia or hemorrhage, and negative birth outcomes like preterm or low weight births.²⁶⁻²⁸ Comprehensive prenatal care is a vital protective factor that reduces maternal morbidity and mortality and improves birth outcomes, with cascading health benefits for the mother and the child across their life course. By excluding noncitizen immigrant women from access to this critical health service, the nation is essentially putting an entire population of immigrant mothers and their children at higher risk of negative health outcomes.²⁸

As they are denied access to prenatal care and face a myriad of other sociostructural barriers, low-income immigrant mothers

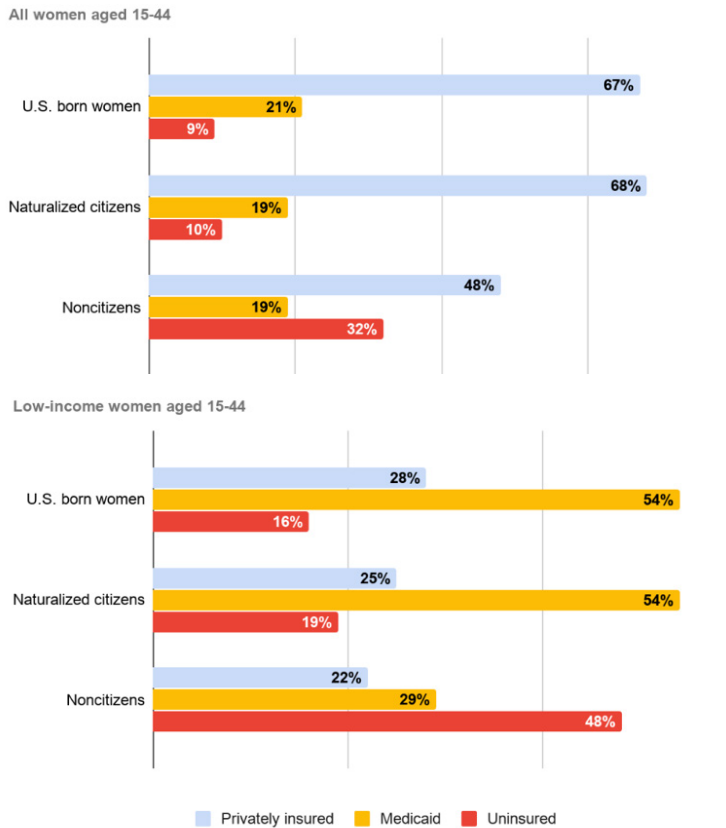


Figure 1. Women of reproductive age who are not citizens are much less likely to be insured, especially those who are low-income (i.e., living under the federal poverty level - \$20,420 for a family of three in 2017). Data courtesy of the Guttmacher Institute

experience higher rates of adverse maternal health outcomes and riskier pregnancies compared to U.S.-born mothers.¹⁹ In a retrospective cohort study of 5,961 singleton births in Colorado, researchers found that undocumented immigrant mothers experienced higher rates of anemia, were less likely to gain enough weight, and were at significantly higher risk of labor complications, such as excessive bleeding and fetal distress, compared to their citizen counterparts.²⁹

Furthermore, the increasingly toxic sociopolitical climate rife with anti-immigrant sentiment and discrimination is associated with increased stress and other nega-

tive health outcomes. Recently, researchers at the UC Berkeley School of Public Health found that immigrant adolescents in a long-term cohort study of Mexican farmworker families in the Salinas Valley region of California had elevated levels of stress and anxiety, as well as sleep problems and blood pressure changes after the 2016 election.³⁰ The impact of racialized stressors has compounding implications on immigrant maternal and child health. One study measured changes in birth outcomes in Postville, Iowa before and after the largest single-site federal immigration raid in U.S. history took place in 2008. The study found that infants born to Latina mothers in Postville had a 24 percent greater risk

of low birthweight after the raid than infants born in the year before, highlighting the implications of experiencing racialized stressors on newborn children of immigrant mothers.³¹ While the effect of stress that is specific to the experiences of immigrant women on maternal and child health outcomes is less documented,³² there is a robust body of research exploring the strong association between prenatal psychological stress during pregnancy and adverse reproductive outcomes.³³ Experiencing discrimination, the threat of deportations and/or the deportation of family members, and a constant inundation of harmful anti-immigrant rhetoric are likely serious risk factors, especially for pregnant immigrant women.^{15,30,32}

FEDERAL POLICY OPTIONS FOR EXPANDING COVERAGE TO IMMIGRANT POPULATIONS

To redefine the fraught healthcare landscape that immigrants must navigate, public health researchers, practitioners, and advocates alike have identified that the policies that cause this legal, structural violence must be directly addressed.^{1,2,20,28} This section outlines three ways that state and federal policy can be leveraged to expand prenatal health coverage to undocumented and legal immigrants.

STATES ADOPT ICHIA AND CREATE FUND TO COVER UNDOCUMENTED IMMIGRANTS

Each state may follow the path that Washington, California, Oregon, Illinois, Maine, New York, and the District of Columbia have already taken: using state funds to cover undocumented immigrant women and adopting the Legal Immigrant Children's Health Improvement Act (ICHIA) option to expand coverage to legally present immigrant pregnant women and children.²² Enacted in 2009 as a part of the

By excluding noncitizen immigrant women from access to prenatal care, the nation is essentially putting an entire population of immigrant mothers and their children at higher risk of negative health outcomes.

Children's Health Insurance Program Reauthorization Act (CHIPRA), ICHIA gave states the option to provide prenatal care coverage with federal matching funds for extending coverage to legally present immigrant children and pregnant women.³⁴ A study published in *Obstetrics and Gynecology* observed changes in immigrant women's usage of prenatal care and its impact on maternal health outcomes before and after Oregon expanded prenatal care coverage to both legally present and undocumented immigrants between 2008 and 2013.^{22,35} The study found that, after the expansion, immigrant women were 32 percent more likely to have a first trimester visit and 28 percent more likely to have received adequate prenatal care visits.³⁵ It also found there were increased rates of diagnosis for gestational diabetes and hypertension after the expansion,³⁵ indicating that these risk factors were previously going undiagnosed. While these findings are promising, adopting ICHIA would still only cover le-

gally present immigrants. To meet the full needs of all immigrants regardless of legal status, states would also need to create a separate fund to extend prenatal care coverage to undocumented pregnant immigrants. In conservative states like Arizona and Texas, enacting either of these policies would require unlikely shifts in political will in their respective legislatures, leaving millions of pregnant immigrants in those regions without coverage for prenatal care.

UNIVERSAL HEALTHCARE COVERAGE: MEDICARE-FOR-ALL

Another strategy is to enact universal healthcare coverage through a policy that is popularly known as Medicare-for-All. The strategy aims to simplify the U.S.'s complex and inefficient systems of private insurance, public insurance, and healthcare providers to equalize access for everyone. It is undergirded by the moral principle that healthcare is a right. Currently two bills have been introduced: Senate Bill 1129, sponsored by Senator Bernie Sanders (I-VT),³⁶ and House Resolution 1384, sponsored by Representative Pramila Jayapal (D-WA).³⁷ Both bills would essentially eliminate private insurance and replace it with publicly funded coverage by expanding Medicare (which currently only covers American citizens aged 65 and older and those with disabilities) to cover all American citizens, as well as legally present and undocumented immigrants.²¹ Adopting a system of single-payer coverage would provide mothers access to prenatal, preconception, postpartum, and all other necessary care regardless of immigration status.

Supporters of Medicare-for-All point to the success and higher quality healthcare of similar programs in other nations, like

Canada, Taiwan, and South Korea, which have lower administrative costs and greater consumer satisfaction.^{38–40} However, while several countries operate on some version of single-payer healthcare, all but a few still place restrictions on healthcare for undocumented immigrants. Medicare-for-All's coverage of all residents, regardless of legal status, would make the U.S. one of only a handful of nations that allow immigrants to access federally funded healthcare plans – single-payer or not. Furthermore, Medicare-for-All would constitute a significant reorganization of the U.S. healthcare system and upend the private insurance market. Despite recent polls showing that a slim majority of respondents are in favor of Medicare-for-All, the policy has been denounced or criticized by both the Trump Administration and several senators, including Democratic senators running for re-election in battleground states,⁴¹ indicating that it is unlikely that this policy will become law in the current political and economic context. While the fate of this legislation is contingent upon the 2020 elections, several Democratic senators, as well as Democratic presidential nominee and former vice president Joe Biden, would not support a single-payer option. These candidates disagree with the Medicare-for-All approach and are instead in favor of passing legislation that lowers the Medicare age and also provides a public option, but does not eliminate the private insurance market.

THE HEALTH EQUITY AND ACCESS UNDER THE LAW (HEAL) ACT FOR IMMIGRANT WOMEN AND FAMILIES

Finally, the third strategy is to actually target the policies that define immigrants' status in the U.S. Rather than tackling health-

care policy to widen healthcare coverage, this approach would reform the immigration policies that directly bar immigrants from accessing federally funded health services. In October 2019, Rep. Jayalpal also introduced H.R. 4701, titled The Health Equity and Access under the Law (HEAL) Act for Immigrant Women and Families.⁴² The HEAL Act would 1) eliminate the ban on enrollment for lawfully present immigrants who are in their first five years of residence in the U.S., 2) enable income-eligible young people with DACA status to enroll in Medicaid or CHIP or buy private insurance coverage on the ACA marketplaces, 3) allow undocumented immigrants to buy ACA marketplace coverage and obtain the ACA's affordability subsidies, and 4) reinstate Medicaid eligibility for immigrants from U.S. territories in the Pacific Islands.^{42,43} By targeting the immigration policies that restrict immigrants from accessing affordable public and private health coverage, the HEAL Act directly combats the aforementioned structures of legal violence.

By targeting the immigration policies that restrict immigrants from accessing affordable public and private health coverage, the HEAL Act directly combats the structures of legal violence.

Furthermore, this policy option would not require a total reorganization of the U.S. healthcare system, as adopting Medicare-for-All would, preserving the private insurance market. And while it would greatly benefit immigrant women and families, as specified in its title, the HEAL Act would open up access for all income-eligible immigrants, regardless of gender or pregnancy.

POLITICAL FEASIBILITY

Despite the fact that broadening coverage is morally just and beneficial for both population health and economic health, most nations have strict restrictions on immigrant's use of publicly funded healthcare. Thailand is the only country in the world that has allowed immigrants, which make up 6 percent of a population of 67.1 million, to buy into their national healthcare upon arrival since the Ministry of Health expanded coverage in 2013.⁴¹ An NPR article in 2016 outlined the Thailand governments' rationale:

“The government recognized the migrants' contribution to the economy, considered access to healthcare a human right, and was concerned that the lack of proper care for this vulnerable population would allow for communicable diseases that had already been controlled in Thailand to spread once again.”⁴¹

Reports indicate that this approach is working, as data show that immigrants residing in Thailand are more likely to seek treatment for communicable diseases, compared to before the expansion.⁴¹ Moving forward, Thailand's government is committed to keeping the policy and further improving its healthcare system. Including immigrants in healthcare coverage would not only fulfill a moral obligation of the right to health, it would also address an economic issue. While President Trump purports that expanding coverage to include undocumented and liminally legal

immigrants would “bankrupt the nation,” evidence shows that immigrants actually subsidize the U.S. healthcare system. In a 2013 study, researchers found that immigrants paid about \$33 billion in Medicare taxes in 2009, but only used \$19 billion in health services.⁴⁴ In contrast, U.S.-born enrollees actually contributed less than what they used in care.⁴⁴ Furthermore, a study in Germany found that limiting healthcare access for asylum seekers and refugees actually led to larger healthcare costs down the road.⁴⁵

Several pieces of evidence support the idea that expanding publicly-funded healthcare to immigrants regardless of status is a popular idea – at least more so than Medicare-for-All. While allowing immigrants to access social services is still an incredibly partisan issue, recent polls show positive trends in U.S. citizens’ perspectives of immigrants living and working in the U.S. In a Gallup poll conducted this year, 76 percent of respondents said they thought immigration was a good thing for our country today.⁴⁶ Furthermore, while Medicare-for-All has been a divisive issue, there appears to be widespread support for covering immigrants with publicly-funded healthcare amongst policymakers at the federal level. In one of the Democratic debates in June 2019, all 10 Democratic presidential candidates – including Biden, Sanders, Indiana Mayor Pete Buttigieg, California Senator Kamala Harris, California Representative Eric Swalwell, New York Senator Kirsten Gilli-

brand, and Colorado Senator Michael Bennet – unanimously raised their hands when asked if their health care plans would cover undocumented immigrants,⁴⁷ demonstrating an unprecedented level of support for expanding services for immigrants and an important shift in political will at the national level. It is worth noting that, while the now-presumptive Democratic nominee has voiced his support for giving undocumented immigrants access to publicly-funded healthcare, Biden has yet to

All 10 presidential candidates unanimously raised their hands when asked if their health care plans would cover undocumented immigrants, demonstrating an unprecedented level of support for expanding services for immigrants and an important shift in political will at the national level.

clarify how he plans to enact this policy if he is elected President. However, this support may indicate that if the HEAL Act, or other legislation targeting immigration policy with consequences on health care coverage, were to land on his desk as President, Biden may view it favorably. In particular, the HEAL Act is strategically framed as addressing the health of women, mothers, and children, as policies that support mothers and their children tend to be more politically favorable.

CONCLUSION

Policies that bar immigrant women from accessing prenatal healthcare are a form of legal violence that causes disparities in maternal health outcomes. These barriers – compounded with the challenges of accessing other social determinants of health, such as education, nutrition, and a sense of community and security – are a critical maternal health issue. “Equalizing the life circumstances of mothers... as a starting

point toward greater social equity in the U.S.”⁴⁸ is one of the top priorities in the field of maternal and child health. Directly addressing this legal violence by implementing policies that expand coverage to low-income immigrant women for prenatal healthcare is a vital first step.

The HEAL Act for Immigrant Mothers and Families would be the most targeted policy for accomplishing this goal. Allowing states to decide whether or not to adopt the CHIPRA option of expanding Medicaid would simply continue the status quo of barring immigrant populations from prenatal care in some states and not others, perpetuating health inequities based on region. And while universal healthcare coverage would be ideal, Medicare-for-All is so hotly contested across partisan lines that it is being called the third rail of American politics today.⁴⁹ By specifically targeting immigration policies and accurately framing the bill as having the greatest benefit for women and families, Rep. Jayapal’s HEAL Act is the most strategic policy option for directly addressing the legal violence that immigrants face.

The passage of the HEAL Act would also send a strong message to all Americans and to the world, countering the toxic anti-immigrant sentiment that has emanated from the current federal administration for the past four years and asserting that the U.S. is truly committed to social equity and the wellbeing of all mothers and families, regardless of their country of origin. While the implementation of the HEAL Act would also need to be accompanied by policies and programs for improving enrollment of immigrant women by combatting fear and distrust (e.g., by reforming

“public charge” and how it penalizes immigrants for their use of vital health and social services), it is a novel, strategic, and potentially popular policy mechanism that would be a monumental first step in expanding healthcare coverage to some of the most vulnerable members of our population.

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BIG DATA IS
WATCHING YOU

ALGORITHMS AND CHILD WELFARE

by Emnet Almedom,
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ALGORITHMS AND CHILD WELFARE

THE DISPARATE IMPACT OF FAMILY SURVEILLANCE IN RISK ASSESSMENT TECHNOLOGIES

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In this report, we examine the use of algorithm-based risk assessments in the U.S. child welfare system, particularly through the example of the Allegheny Family Screening Tool (AFST). First, we conducted a literature review on the history of the child welfare system to uncover the system's complexities and the values at play at various turning points in history. We then review the history of both analog and automated risk assessment tools in child welfare in order to engage with the new questions raised when delegating (partial) decision-making to a machine learning technology. This analysis revealed to us the systemic loss of privacy through surveillance for poor families of color interfacing with government-run programs, especially when juxtaposed with the rights afforded to wealthy, white families. In the short-term, we recommend that child risk assessments be subject to greater regulatory standards, that the incentive structure for designing such tools be investigated, and that tool designers acknowledge their duty to leverage their power to protect the most vulnerable subjects of their creations. Ultimately, massive structural reform, such as a shifting of power to families most impacted and a society that meets material needs rather than punishes, is needed in order to address the root causes of child maltreatment and abuse.

INTRODUCTION

Child Protective Services (CPS) is a United States government agency that is in charge of investigating and assessing reports of maltreatment in many states and cities, and also intervening to ensure that children are protected from further maltreatment. Generally, a mandated reporter (someone who, because of their profession, is legally required to report any suspicion of child abuse or neglect) will alert the local CPS agency of a potential situation. From there, a caseworker will take on the investigation of the family situation.¹ Because of data accumulated over time, there are many areas of child protection where routine processes

have been established. However, because of variability from case to case, involving a multitude of factors and factor interactions with each other, even the most skilled caseworker may not be able to correctly diagnose a situation. There are often false positives (a threat to a child is identified but the child has actually not been maltreated) and false negatives (no threat is identified but the child is indeed in danger). Many agencies have adopted assessment tools to assist with detecting harm to a child.

Because many counties are often overflowing with calls about potential child neglect, some have implemented the use of predictive-risk modelling algorithms for child

safety with the intention of assessing more cases quickly. In this article, we will primarily be discussing the Allegheny Family Screening Tool (AFST) because of the availability of information regarding this

tool, and because they were the first jurisdiction to use an automated assessment to assist with child safety risk screenings starting in 2016.² Since then, several U.S. child welfare agencies have begun using algorithm-based screening tools, such as Eckerd

Connects' Rapid Safety Feedback tool used in Illinois, Connecticut, Louisiana, Maine, Oklahoma and Tennessee. In this paper, we do not review each tool relative to the other, as there are many common features and implications for use regardless of type of tool. However, it is worth noting that the AFST is a tool owned and operated by the county, while Eckerd Connects' tool is privately-owned and contracted out to government agencies. This difference in governance has huge implications for transparency and accountability; Illinois' child welfare agency terminated their contract with Eckerd Connects due to failure to predict child fatalities and the private company's failure to disclose details on the inner workings of the algorithm. Conversely, the AFST is drawing interest from counties in Colorado and California's Department of Social Services as a role model for similar use of predictive analytics. Given these developments and the fact that one in three children in the United States is the subject of a child welfare investigation by age 18, we believe it is clear that the use of algorithms in child protective services is

This analysis revealed to us the systemic loss of privacy for poor families of color interfacing with government-run programs, especially when juxtaposed with the rights afforded to wealthy, white families.

a growing trend to watch.³ However, an algorithm is only as good as the data that is fed into it, and algorithmic risk assessments pose some serious dilemmas regarding the biases in the decisions they make. In the

coming sections we will discuss how this algorithm has been implemented into caseworkers' workflow as well as the criticisms of its usage. We will then offer policy recommendations regarding the use of the algorithm.

HISTORY OF U.S. CHILD WELFARE SYSTEM

Since the algorithm-based tool attempts to quantify the risk of child abuse and then trigger a human-based system response (i.e. an investigation), the context of how this U.S. child welfare system has historically developed becomes relevant. No tool, regardless of the perceived degree of separation from human judgement, can operate in a vacuum. Thus, we begin our analysis with a broad look at the child welfare system and its history, rather than simply the relationship between tool designer and its subjects. Our main objective is to provide background on the child welfare system's main actors, history, past reforms, and the values embedded throughout. Through this context, we can better understand this era's latest turning point that shifts some decision-making power from caseworkers to technology.

Early responses to child poverty included jailing children for vagrancy or warehousing them in poorhouses.⁴ It was not until

the 19th century that the first child welfare organizations in the United States were created. Institution-based child welfare has its roots in charities such as New York's Children's Aid Society, which was founded in 1853 by Charles Loring Brace and still exists today. Under the argument that it would be more humane to place children in homes than in jail, Brace created the concept of "Orphan Trains" in which groups of children were sent to the frontier regions of the West away from cities.

The roots of Brace's argument become more clear when accompanied by the fact that he referred to these children as "the dangerous classes." In his 1872 essay "The Life of the Street Rats," Brace wrote: "These boys and girls, it should be remembered, will soon form the great lower class of our city. They will influence elections; they may shape the policy of the city; they will assuredly, if unre-

The penal system and the child welfare system have been co-designed to be remarkably similar: both institutionalize Black families at rates disproportionate to the total population.

claimed, poison society all around them." This idea of removing children from working-class families was not implemented to address the poverty endangering destitute children, but rather implicated their par-

ents and created an alternative in "out-of-home placement." Brace's model created the foundation for modern-day foster care, a system that displaces children and separates families at alarming rates. This shift marked a turning point in which the act of child removal transitioned from imprisonment to out-of-home placement. This transition perhaps improves the physical conditions of child removal, but ignores

the status quo and material conditions of families subject to the child welfare system. The American conceptualization of child protective services has specific ties to chattel slavery and colonialism that cannot be ignored. During the bondage of Africans under chattel slavery, families were routinely broken up and members sold as commodities, while Black women had their reproductive capacities reduced to reproducing new free labor for slave owners. After Emancipation in the 1860s, Black children were "apprenticed" for cheap labor, which served as one of the many ways that subjugation endured beyond legalized enslavement. Since these times, the penal system and the child welfare system have been co-designed to be remarkably similar: both institutionalize Black families at rates disproportionate to the total population.⁵

In the case of Indigenous families, the child welfare system served as one extension of the state's genocidal intent to destroy language, culture, and society since the beginning of settler colonialism of North America. Specifically, starting in the late 1870s, the Bureau of Indian Affairs

(BIA) created nearly 100 boarding schools for Native American children to live completely immersed in white American culture. In the 1960s, in partnership with the Child Welfare League of America (CWLA), the BIA expanded their child removal efforts to adoption; 85 percent of these were adoptions by non-Native couples.⁶ The impacts of these roots are observable in the disproportionate number of Black and Indigenous children in the

current child welfare system, particularly in foster care. In Minnesota, indigenous children are represented at 10 times their percentage of the child population, and in Alaska more than three times.⁷

THE WELFARE SYSTEM TODAY

Today’s child welfare system is a complex network of public and private entities, inclusive of government agencies, non-profit organizations, private foster homes, group homes, treatment facilities, schools, and law enforcement. As evidenced by the historical roots of child welfare, child protection services are predicated on the control of poor, minority, and (im)migrant families. In Wisconsin in 2016, a child living in a home with less than \$15,000 in household income was six times as likely to be involved with the system as a child from a home with a higher household income.⁸ In 2011, a yearlong investigation by the Applied Research Center found that more than 5,000 children of undocumented parents were remanded into foster care when their parents were detained for deporta-

tion.⁹ Much remains unknown about the children impacted by the increase in family separations along the U.S.-Mexico border in 2017, but these numbers can only be expected to have grown. These disparities appear in national child welfare statistics, as seen below.

COMPLEXITIES EMBEDDED IN THE U.S. CHILD WELFARE SYSTEM

Building on this understanding, we identify specific complexities within the child welfare system and illustrate the dangers of system stakeholders relying on data that mask the system’s complexities. We specifically address the broad definition of child welfare, the interaction between child welfare and policing, the lack of discretion and autonomy for caseworkers and parents, and the loss of privacy for poor families.

*Broadened definition of child welfare*¹¹: In the early 1970s, there was increasing public awareness of child abuse, and the Child Abuse Prevention and Treatment Act (CAPTA) was one result. CAPTA lumped

Disproportionality in Child Welfare Involvement by Race/Ethnicity, 2014 Census Data ¹⁰			
Race/Ethnicity	Percent of total child population	Percent of children identified by CPS as victims of neglect or abuse	Percent of children in foster care
American Indian/Alaska Native	0.9%	1.3%	2.4%
Asian	4.8%	0.9%	0.5%
Black or African- American	13.8%	22.6%	24.3%
Native Hawaiian/Other Pacific Islander	0.2%	0.2%	0.2%
Hispanic (of any Race)	24.4%	24.0%	22.5%
White	51.9%	46.4%	43.4%
Two or More Races	4.1%	4.7%	6.8%

child abuse and neglect into an umbrella category of child maltreatment. In the process, CAPTA obscured the relationship of race and poverty to allegations of neglect, which account for the vast majority of state interventions into families. CAPTA sets up a “treatment model” for child maltreatment, which essentially conflates the categories.

By making disclosure a requirement for assistance, exorbitant amounts of data have been collected and found to correlate with outcomes of interest to the state.

*Interaction between child welfare and policing*¹²: Police are responsible for producing about one-fifth of all reports of child abuse and neglect investigated by local child welfare agencies. Low-level interactions with police often result in the initiation of a child welfare investigation. Because police contact is not randomly or equitably distributed across populations, policing has likely spillover consequences on racial inequities in child welfare outcomes.

Lack of discretion and alternatives for caseworkers: Caseworkers are taught to identify “risk factors,” including past family conflict and reliance on public services, to identify the threats within the only person over whom they have power: the parent. For instance, Lash recounts a case of suspected child abuse in 2013 involving a homeless mother and baby who were living doubled-up with a friend in New York City’s public housing (NYCHA).¹³ A NYCHA home investigation led to the baby being examined at an emergency room. After the child was found to be healthy and well cared for, the caseworkers hesitated to close the case due to other “risk factors” that showed up in the system’s many years of

data on the mother. She was previously a victim of domestic violence, she had only one relative in the city, and she had been homeless before. Lash notes that caseworkers know that many of the root causes of neglect and even abuse, which show up as risk factors in the child welfare paradigm, are outside of the parent’s control. However, the existing system as well as caseworker training offers few alternatives

other than opening an investigation, providing parent-specific “in-home” interventions, or transitioning the child to “out-of-home care.” This has long been a critique of the child welfare system, even before algorithmic tools came into play.

Limited legal protection for parents and children: It is fundamental to understand the child welfare system as parallel to the legal system for both juveniles and adults. For the purpose of our analysis, we will focus on the legal rights afforded in child welfare proceedings. In 32 states, both children and parents have the categorical right to representation during proceedings. In the remaining 19 states, access to legal representation for children and parents is at the discretion of the court.¹⁴ However, this representation is often inadequate in comparison to the resources of the child welfare system. For instance, in 2000, Washington State was spending three times more on lawyers representing its child welfare system than on lawyers representing parents fighting that system.¹⁵

Compliance as the key metric of progress: If a court requires a specific intervention,

parents are then primarily judged based on their compliance, even if the services (ex. parenting class) have no connection to their most urgent needs (ex. childcare, housing) that led to the report of maltreatment. However, caseworkers focus on compliance with court-appointed interventions because it is often the only thing they can measure.¹⁶ There is a lack of autonomy embedded in the system response. This translates into limited metrics of progress (ex. parenting class attendance, physical presence in court), which then become easily translated into data points in a metric-based tool, without addressing any of the underlying challenges families face.

Loss of privacy for poor families: Underlying this limited legal protection and few options to customize care is a more overarching systemic issue on which we center our future analysis: a historical loss of privacy rights for poor families. Reproductive justice scholar Khiara Bridges has researched this phenomenon through the experience of pregnant mothers seeking prenatal care through state-provided Medicaid.¹⁷ In her ethnographic fieldwork, she observes caseworkers ask patients questions ranging from past sexual abuse to intimate partner violence, what they ate, how they make their money, and how their partner makes their money. In the process of accessing services entitled to them,¹⁸ poor families become “public families” and lose the privacy rights that are afforded to their wealthy counterparts. Bridges theorizes that poor families lose their privacy because their reliance on public assistance is thought to signify a “moral laxity” that makes “mistreatment and exploitation of [their] children sufficiently probable.”¹⁹ In this analysis, Bridges reveals a linkage to child protective systems: probability of

harm is used to justify inquiry into a parent’s choices during any interaction with public systems, from public insurance to drug treatment. Again, from this complexity in the broader system, we identify a source of data for the algorithmic tool. By making disclosure a requirement for assistance, exorbitant amounts of data have been collected and found to correlate with outcomes of interest to the state. The ability to identify and code data that makes maltreatment “sufficiently probable” incentivizes a self-reinforcing cycle of surveillance.

We review this history and present context in order to better understand the impact that algorithmic tools have on the present and future of the child welfare system. Our goal is to approach this question under a post-colonial framework. A framework which, in the words of Lilly Irani and her co-authors, recognizes that “all design research and practice is culturally located and power laden.”²⁰ In our review of the history, we see myriad power imbalances between the ruling class and the working class, parents and the system, and caseworkers and the system. The future of the child welfare system is unknown, but we can consider ongoing reforms for guidance. In 2013, the Journal of Indigenous Social Development pointed to the importance of decolonizing social work in order to recover from the reality that, just under 100 years ago, European colonies and former colonies encompassed 84 percent of the land in the world.²¹ This decolonization process will require a return to community self-determination within or as an alternative to colonial systems. Our question is in what ways is algorithmic risk assessment laden with the complexities of the status quo rather than supporting new values in the process of decolonizing systems like child protective

services. In our historical analysis, we identify a reliance on immediately available and easily measurable data to come to decisions.

Could putting effort into optimizing risk scores and mathematical definitions of fairness distract from other goals? Or could this work further uncover the system's complexities?

The ability to identify and code data that makes maltreatment "sufficiently probable" incentivizes a self-reinforcing cycle of surveillance.

With this grounding in the roots, complexities, and current realities of the American child welfare system, we can now move into examining the tools that are used within the system — from analog risk assessments to today's automated decision systems.

HISTORY OF RISK ASSESSMENTS IN THE UNITED STATES

There are several kinds of assessments that agencies in charge of child well-being use in order to assess the risk a child might be experiencing. For example, the variety of assessments include identifying "dysfunctional parent-child systems," determining "threat of immediate harm and to identify steps needed to protect children," and even looking at the "potential influences of substance use and substance use disorders for risks of maltreatment."²² Generally, the assessments we found are done by hand, usually by the caseworker (and sometimes by parents or involved family members) and consist of standard "yes/no" questions where the "yes" is equal to one and a "no" is equal to zero. The final risk score is simply a sum of the total "yes's."²³ There is generally a threshold for what constitutes a

high versus medium versus low risk based on these simple answers.

It is important to note that all assessments contain different questions, assess different factors, and have different cutoffs for what constitutes a high likelihood that a child is being abused and/or neglected. Es-

entially, there is no foolproof method for correctly diagnosing a situation. Because of this lack of agreement and because each situation is nuanced, these assessments are only a part of what goes into the diagnosis of each case. A holistic approach involving data collected on the family by the local government, the caseworker's interaction with the family (although in most cases, the caseworker does not interact with the family at all), and their intuition regarding the situation is also an essential component. Therefore, while the handwritten assessment is included as a part of the process, it is certainly not the only part and can be overridden by the caseworker's judgment.²⁴

CURRENT CHILD-SAFETY RISK ALGORITHMS AND HOW THEY WORK

In 2014, the Department of Human Services (DHS) in Allegheny County, Pennsylvania began soliciting proposals to "better use data already available to us to improve decision-making through predictive-risk modeling." Researchers from Auckland University were awarded this contract, and began looking at data through the county's Data Warehouse, which is the central repository of social and human services data

related to DHS clients. The data includes “service information received through DHS as well as many other publicly funded entities including the local housing authorities, the criminal justice system, and local school districts with which there are data-sharing agreements.”²⁵ Here is what the county says about the tool:

“The final product was named the Allegheny Family Screening Tool, and it uses information already contained in our data systems to inform call-screening decisions when allegations of maltreatment are received. A Family Screening Score is calculated by integrating and analyzing hundreds of data elements on each person added to the referral to generate an overall Family Screening Score. The score predicts the long-term likelihood of re-referral, if the referral is screened out without an investigation or home removal, if the referral is screened in for investigation.

The higher the score, the greater the chance for a future event (e.g. abuse, placement, re-referral), according to the algorithm. If the Family Screening Score is at the highest levels, meeting the threshold for ‘mandatory screen in’, the call must be investigated. In all other circumstances, however, the Score provides additional information to assist in the call-screening decision-making process. It does not replace clinical judgment. The Family Screening Score is only intended to inform call-screening decisions and is not used to make investigative or other child welfare decisions.”²⁶

With the usage of publicly-available data like court records, social media, and information from the data warehouse, the screeners can then run the model. There are 131 indicators available in the county data that are correlated with child maltreatment. The model outputs a score that goes from 1 (lowest risk) to 20 (highest risk) by weighing “predictive variables” like “receiving

This raises a concern for us on the data that is so foundational to the viability of automated risk assessments. Since families of color tend to be called in disproportionately, if a child is indeed removed from their family resulting from one of these calls, does this create a positive feedback loop for the algorithm that continues to target families of color?

county health or mental health treatment; being reported for drug or alcohol abuse; accessing supplemental nutrition assistance program benefits, cash welfare assistance, or Supplemental Security Income; living in a poor neighborhood; or interacting with the juvenile probation system.” Above a certain threshold, an investigation is automatically triggered.²⁷

Much of the criticism of the algorithm claims that it does not actually model child maltreatment, but instead models community and family court decisions. For example, the algorithm uses proxy variables to stand in for maltreatment which include re-referral (when a call to the hotline about a child was initially screened out but another call is made regarding the same child within two years) and child placement (when a call about a child results in the child being placed in foster care within two years). Also, the model does not take into account the fact that community members tend to call in about children from Black families at a much higher rate.²⁸ And, many of the variables in the algorithm that

are used to predict neglect and abuse are about whether a family has taken advantage of public services like food stamps, county medical assistance, and Supplemental Security Income. This means that poorer families are penalized more harshly than families who may be getting similar assistance with finances or health but through private means.²⁹

Thankfully, the algorithm is currently being used alongside the judgement of a call screener. However, according to the *New York Times*, “call screeners and their supervisors will now be given less discretion to override the tool’s recommendations — to screen in the lowest-risk cases and screen out the highest-risk cases, based on their professional judgment.”³⁰ It is concerning and perhaps telling that these tools are intended to entirely transition out call screeners. Importantly, though, according to the AFST website, “more than one-third of children classified as highest risk by the AFST were screened out by the intake manager.”³¹ It would make sense that the extreme cases of highest and lowest risk AFST classification would be easier for the algorithm to make a decision closer to a human judge’s than more nebulous cases in the middle, but even here, one-third of highest risk decisions were negated by the call-screeners. It is imperative that a human professional, or multiple, gives a second opinion independently of the tool to override the algorithm’s decision if necessary so long as this tool continues to be in use.

The subjectivity and complexity that we see in reviewing the history of risk assessments and its stakeholders leads us back to loss of privacy. We believe that part of why human judgement is so critical in this arena stems from the historical reliance on

data collected by the government, rather pervasively, only from one segment of the population. This raises a concern for us on the data that is so foundational to the viability of automated risk assessments. Since families of color tend to be called in disproportionately, if a child is indeed removed from their family resulting from one of these calls, does this create a positive feedback loop for the algorithm that continues to target families of color? We believe this could be an issue because though white and more privileged families have issues with neglect or abuse, since they are called in less frequently, the algorithm might skew away from these families due to referral bias.

RECOMMENDATIONS & KEY TAKEAWAYS

CREATE MORE CHECKS IN THE SYSTEM

Due to the complexities of each case involving children and their caregivers, we do not think that solely using an algorithm constitutes a holistic and fair approach to making these decisions. Human judges should be present at every major decision point in the process in order to provide other perspectives that are not entirely based on numbers and historical data. The current “phasing-out” of call-screeners for lowest-risk and highest-risk cases is concerning, because even theoretically “easy” decisions can be edge cases that might need to be looked at more closely.

SET REGULATORY STANDARDS FOR USING TAINTED DATA

Our analysis ultimately led us to focus on the unequal distribution of privacy rights

regarding family life. A history of collecting data only on the most marginalized serves as the foundation for the strong correlations between poverty and child maltreatment identified in today's system. We are not reflecting on whether the correlations are accurate or inaccurate, but rather that the status quo has created a tainted and one-sided dataset to feed risk assessment technologies. In the vein of Frank Pasquale's latest publication in the *Columbia Law Review*, we believe there are "data-informed duties in AI development."³² He suggests that organizations "relying on faulty data can be required to compensate those harmed by that data use."³³ Though Pasquale focuses on industry uses of artificial intelligence, the spirit of his message could apply to the case of child welfare risk assessments which both cause families harm and feed off of the harm done to families outside of the child welfare system.

We believe that if machine learning is to continue to be used in social services, the history of the data must be considered.³⁴ Through our literature review, we did not find evidence of regulation over the

child welfare data used in machine learning technologies. At the time of writing, Pennsylvania's statutes on Child Protective Services did not include any guidance on the use of machine learning or artificial intelligence. Searches for the words "automated" and "algorithm" revealed zero results. Even a search for "risk assessment" revealed limited State-level guidance on the data used in analog tools: "Each county agency shall implement a State-approved risk assessment process in performance of its duties under this subchapter."³⁵ Government agencies using algorithmic technology have a duty to transparently share regulatory guidelines, as well as a path forward, such as victim restitution, when a risk assessment tool leads to a destructive choice.

THE CREATORS OF ALGORITHMIC TOOLS MATTER

The vendor and designer of the tool matters. Each stakeholder has different priorities — a state agency designing the tool has different incentives from a contracted private company designing the tool, both of which may have interests that do not

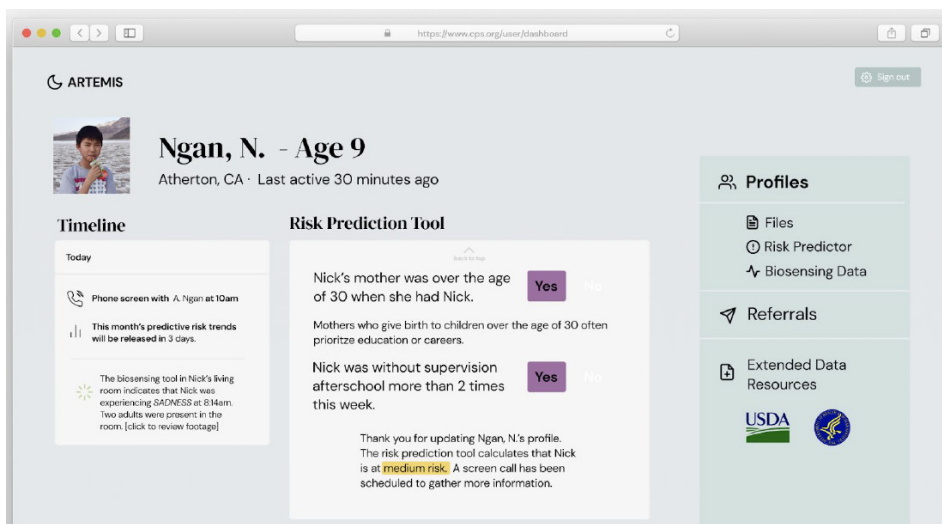


Figure 1.

match those of impacted children and families. It is important to keep in mind who controls the data depending on who created the system. For example, fitness trackers are often used in workplaces for health insurance purposes, but the vendors of the trackers are often the ones who own the data collected because it is stored on their servers. Local governments need to pay attention to whether the data they are inputting into models designed by third parties, as well as the outcomes of these models, will be stored on the company's servers and therefore owned by the company itself. This has massive implications for privacy — much of this information is extremely sensitive and could have huge consequences if a third-party has access to it.

DESIGNERS CAN AND SHOULD PUSH BACK ON THIS "NEW NORMAL"

Designers should commit to thinking critically about the power differentials inherent to their work and collectivize their power through codes of conduct. Virginia Eubanks has suggested a "Hippocratic oath for coders" that could promote a "do no harm" ethos within the data science community.³⁶ She proposes two simple questions: "One is, does it increase the self-determination of poor and working people? And the second is, if the system was aimed at anyone but poor and working people, would it be tolerated?"³⁷ Another approach is in the Feminist Data Manifesto created by feminist data scholars to "refuse harmful data regimes and commit to new data futures." Their approach seeks to embrace the politicized nature of data and commits to working with marginalized and "minoritized" people, rather than work *about* them.³⁸ In considering these possibilities, we imagine what it might look like to place such levels

of surveillance on wealthy, majority-white communities. The results strike us as dystopian and unimaginable — a dashboard tracking a parent's every move, every choice, every mistake (see Figure 1 below). The figure is the result of using speculative design methods to reimagine caseworker portals when pushed to the extremes of privacy-harming practices. We show a risk prediction tool that explicitly utilizes metrics that do not provide meaningful representations of risk or harm, such as the age of mothers and invasive surveillance of families in their homes. When calculating risk, age has been weaponized particularly against "younger" or "older" mothers. We featured age as a risk factor in the dashboard interface to attempt to subvert risk assessment in ways that apply such calculations of risk to wealthier counterparts.

However, it is not lost on us that these technologies are already having nightmarish impacts on the communities who have always been under the surveillance of the child welfare system. The cost-cutting, science-advancing fantasy of the creators of the Allegheny Family Screening Tool (AFST) are the nightmares of families struggling under the weight of systemic oppression and racialized capitalism.³⁹ We do not wish to understate the power dynamics embedded in design organizations, but we do wish to call out the power embedded in the skill of designing.

CONCLUSION

It is important to note that this tool is only a part of what is already a deeply flawed system, but it perpetuates the inequity within it. We should perhaps be thinking about ways to fundamentally change how we view child safety, including methods of

prioritizing family rehabilitation, restorative justice, and family preservation, rather than automating the ability to predict intervention for family-child separation. Our historical analysis and values analysis reveals to us that this predictive power is predicated upon centuries of unjust economic and geopolitical conditions. Massive structural reform, including the centering of families most impacted, is needed in order to address the root causes of child maltreatment and abuse. Tools like AFST are only one part of the problem, but could exacerbate the situation if they become an accepted part of child welfare agencies throughout the country. Our intention is to further a more nuanced, values-centric conversation that helps designers and policymakers deeply interrogate their roles in the future of child welfare.

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DATA SHARING IN THE HEALTHCARE INDUSTRY

by Sofia Jordan



DATA SHARING IN THE HEALTHCARE INDUSTRY

TOWARDS A REGULATORY MODEL THAT SAFEGUARDS FUNDAMENTAL PATIENT RIGHTS

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Edited by: Randy Clopton & Justin Yoo

The digital age poses challenges that require governments to think more proactively and broadly about regulation, especially about the power data grants corporations and how this is changing different industries. In particular, as it pertains to healthcare in the United States, mergers and acquisitions have increased since the passage of the Affordable Care Act. Consequently, antitrust authorities have become an ever-more important decision-making actor. To protect patients' fundamental rights, policymakers, regulators, and elected officials need to expand traditional definitions of consumer welfare and explore new tools to hold corporations accountable. A new inter-agency regulatory model would unlock broad expertise, thus better mitigating the threats of gigantic industry players and placing special emphasis on equitable data governance.

INTRODUCTION

In any industry, mergers and acquisitions have always been a source of worry for antitrust authorities; with less competition, there's always the risk of monopoly power leading to higher prices and fewer or poorer services. Health, however, is not like most markets. Consolidation in the healthcare industry can lead to better services and thus better patient outcomes. Considering the substantial differences¹ between providing health care in comparison to say, a taxi ride, we face a crucial tension in regards to "how much market" we should allow for in this industry.² On one hand, there are benefits to more integration; for instance, access to swaths of data can result in more comprehensive, more personalized and, ul-

timately, better treatments while also containing costs. On the other hand, however, are the questions of how much power data grants corporations and how government agencies should be thinking of regulating insurers and providers in order to preserve fundamental rights like patient privacy.

Striking an equitable balance between outcomes and power is especially important given how much data is involved throughout the entire healthcare system: information is created, analyzed, stored and disseminated every single time a patient receives care; whether it be a CT scan, a prescription for drugs, or a referral to a specialist.

While access to more data has tremendous potential to advance care, we should be

vigilant about how it will be used and by whom. It is a well-known fact that data regarding consumer behavior has been extensively mined, analyzed, and scrutinized for profit-making; casinos in Vegas will target certain clients and offer them discounts at their hotels in order to encourage bouts of gambling³ and menstrual tracking-apps have integrated with social media so that a woman who misses her period receives diaper-related marketing on Instagram. How could these dynamics play out in health care?

In this article, I state that in the health-care industry, there are positive aspects of consolidation — namely, more coordinated care, better patient outcomes and contained costs — but that overlooking the crucial aspect of access to data — and the sheer power it affords companies — is a tremendous blind spot when trying to regulate them. In the digital age, where data privacy and ownership are a vital cornerstone of how consumers interact with corporations, I pose that regulatory models need to be adjusted if we are to preserve certain fundamentals rights like patient privacy.⁴ In particular, I describe why the current antitrust framework may be insufficient and compare it with a proposed, inter-agency regulatory model. The two criteria under which I evaluate these two policies are efficiency and equity, the latter analyzed under the lens of patient-privacy protection. With this, my goal is to discuss the regulatory challenges that the era of big-tech and data “as the new oil” pose and recommend a set

There are positive aspects of consolidation in the health care industry but overlooking the sheer power that data affords companies is a tremendous blind spot when trying to regulate them.

of contextualized norms and institutional infrastructure that can protect people’s fundamental rights while expanding how we think about consumer welfare.

WHY INTEGRATION MAKES SENSE

The Affordable Care Act of 2010 (ACA), aimed to transform various aspects of the health care system in the United States. One major goal was to shift financial risk from the federal government to insurers and providers in order to promote better health outcomes and a more efficient delivery of services. Arguably, this has led to a shift in the system towards more contained and managed care, with increased power of governments as payers, and away from the free-market paradigm.

In order to achieve this, Medicare and Medicaid increased the amount of care that was reimbursed on an episode basis⁵ rather than on fee-for-service models. In an episode-based payment structure, the federal government pays insurers a one time, all-inclusive payment for patients to receive care in a specific network, rather than per each line item of treatment in an open network plan.⁶ As a result, providers face increased monetary pressure to deliver value-based treatment — a delivery model in which providers, including hospitals and physicians, are paid based on patient health outcomes — in order to contain costs and comply with new regulations or risk federal reimbursements. This change led to consolidations across the continuum of care — a phenomena I further explain

in the following section — as health networks, insurers and physicians sought to reduce expenditure in administrative costs, decrease in-hospital treatment and promote the delivery of services through primary and community-based care.

In this context, there is one key piece that improves quality of care for patients: access to data. This is, of course, not novel in the day and age we live in, where technology is not only used to better streamline processes but also to understand how people behave and tailor services to be ever more personalized. This is particularly true in health care, where the benefits of aggregating data and consolidating across the value chain are well documented,⁷ and have already been incentivized and pursued. The correct use of data allows for more advanced and personalized treatments, improved operational efficiency due to fewer medical errors and readmissions, and scientific breakthroughs because diseases can be studied more profoundly.

However, this situation confronts us with a new regulatory puzzle to solve: how to maintain and promote the incentives that allow for greater coordination and better delivery of care, while constricting practices and infrastructures that may lead to market power abuse, specifically those that come from increased access to data.

The healthcare industry has become more vertically integrated: insurers, pharmacies, hospital systems and drug manufacturers have all tried to achieve synergy to provide a wider array of services more efficiently.

WHY INTEGRATION CAUSES DATA-RELATED ISSUES THAT ARE CURRENTLY NOT BEING DISCUSSED

Companies can grow and increase their profits in a variety of ways; one of the most straightforward being mergers and acquisitions.⁸ Buying a competitor — known as horizontal integration — quickly raises regulatory eyebrows as it is a direct method of decreasing competition in a market.

However, businesses can also pursue vertical integration, that is, consolidating across the value chain by acquiring different stages of production. Over the past several years, the healthcare industry has become more vertically integrated: insurers, pharmacies, hospital systems and drug manufacturers alike have tried to achieve some sort of synergy by integrating in order to provide a wider array of services in a more efficient manner.

One of the most notable — and controversial — examples of this is the CVS-Aetna case.⁹ In this example of vertical integration, the pharmacy chain CVS announced in 2017 that they would take over the insurance company Aetna in a US \$70 billion operation. However, the Tunney Act of 1974 requires that these types of operations be approved by a judge, examining whether the agreement between the regulator and the companies is actually meeting the public interest.¹⁰ The American Medical Association, the AIDS Healthcare Foundation, and consumer interest groups¹¹ all expressed concern about how this might affect the prices that patients faced. After

holding a hearing to ponder both sides of the argument, U.S. district judge Richard Leon approved the deal. With this, the newly rebranded CVS Health — the country’s biggest pharmacy chain¹² — now held control of three layers of services: the insurance plan segment through Aetna,¹³ the pharmacy benefit manager (PBM)¹⁴ — the company that delivers prescription benefits — and the actual pharmacy selling directly to patients.

Critics of this deal maintained that the mechanisms through which this new giant of the industry would reduce competition were varied,¹⁵ but most importantly, that almost any gain in potential cost savings would rarely benefit consumers and instead be easily captured by shareholders as higher profits, given the market concentration and lack of transparency present.

When considering their impact on patient privacy, I maintain that to fully grasp the extent to which mega mergers influence market structures we need to understand the power that access to overwhelming amounts of data affords companies, and, consequently, determine the risks that traditional antitrust governance may overlook.

In this case, CVS Health has complete oversight of patient behavior from the moment they request treatment until they purchase the needed prescription drugs. This facilitates the selection of different people into money-making channels much

more easily: the pharmacy now knows a person’s spending structure and can target those who are more likely to avoid generics and offer the insurance-covered drug even though it may have a higher co-pay. With this information, the company can also discriminate against patients who are not insured by them and exclude them from price discounts or special offers. In the long run, by accessing data from services reimbursements, CVS Health can model who the healthier patients are, and steer them towards buying insurance from them, effectively excluding those who are

less healthy from their risk pool. As a PBM, it is easy for CVS Health to foreclose competition from competing pharmacies since they know the others’ prices, usages, and methods of delivery. Geographically, this can easily evolve into

Shortcomings of current antitrust policymaking include the narrow definition of consumer welfare and limited tools of analysis for evaluating deals that change market structure.

a fiercely inequitable scenario in which certain communities end up with a single walk-in pharmacy, which controls prices, supply and can also obtain patient data through walk-in services.

I propose that one of the shortcomings of current policymaking is the narrow definition of consumer welfare and the limited tools of analysis for evaluating deals that change market structure. As shown in the CVS/Aetna hearings, certain scholars, economists and lawyers have shared their concerns about antitrust governance. Lina Khan, an academic fellow at Columbia Law School and the author of “Amazon’s Antitrust Paradox”, has exposed that simply “*pegging competition to consumer welfare defined as short-term price effects is [a*

framework that is] *unequipped to capture the architecture of market power in the modern economy.*"¹⁶ In this context, the two areas I focus on are data concentration and patient privacy.

CURRENT ANTITRUST REGULATION AND THE PARTICULAR CASE OF HEALTHCARE

Antitrust regulation¹⁷ seeks to advance free and open markets in which competition can flourish.¹⁸ This mission is contained in the Sherman Act, a law that Congress passed in 1890 to contain the power of large "trusts" like the U.S. Steel and Standard Oil¹⁹ company and whose main goal was to restrict agreements that would lead to monopolization or detriment trade. There are two federal institutions in charge of enforcing these regulations: the Department of Justice (DoJ) and the Federal Trade Commission (FTC).

In the case of health care, there has long been a delicate balance between strict enforcement of antitrust regulation and flexibility to encourage efficient care delivery.²⁰ For instance, in 1993, both the Federal Trade Commission and the Department of Justice established enforcement guidelines that described "safety zones"²¹: certain joint-ventures and mergers that would not trigger antitrust enforcement since they were deemed as "pro-competitive and efficiency-driving,"²² which, although not health-specific might be a useful framework for this industry. For instance, when thinking about whether a merger would avoid duplication and standardize processes for the better even though it may reduce the number of competitors in the industry. Additionally, the FTC has the explicit goal of fostering innovation in this particular

industry,²³ an objective that is especially important in the post-ACA era where actors have been incentivized to deliver care in new ways.

In this context, antitrust regulation determines that both the FTC and DoJ have jurisdiction over merger review; even though this is rarely a "one-size-fits-all" model and evaluations are done on a rigorous, case-by-case analysis by the agency with the most industry expertise, the lens under which these operations are evaluated is almost exclusively a technical one.²⁴ Any transaction that is above a certain threshold of market power is analyzed and will be barred if an effect of the deal "may be substantially to lessen competition or to tend to create a monopoly."²⁵⁻²⁶

In the case of health care, in general, special attention is placed on this latter aspect since purchasing power that comes from market concentration may afford certain actors the ability to negotiate prices and artificially raise them. This is true for instance if a network of hospitals, or a physician's association, becomes large enough that they can arbitrarily set prices and demand increased reimbursements from payers since, for payers, it would be costly to exclude them from the network because it would mean offering less attractive plans for patients. In recent years these types of mergers have received more scrutiny as they are seen as a threat to competitive prices and lack a demonstrated increase in quality of patient care.²⁷

CHALLENGES IN THE DIGITAL AGE

More recently, the FTC has acknowledged that the digital age poses new challenges as to how we think about merger revision²⁸

stating that digital platforms have significantly altered our economy, especially in relation to how goods and services are marketed, targeted and delivered.²⁹ Probably the most striking transformation — and one that should raise concerns even beyond antitrust enforcement — is the power that access to data can grant. Scholars have argued that the gain for Google is not just knowing the behavior of a particular individual but the sheer amount of critical, networked data that allows the company to exploit revenue by comparing one person to similar users, drawing conclusions from this, and then predicting (and even influencing) future behavior. This control undoubtedly allowed Google to lock-in its dominant position.³⁰

This is no different in the healthcare industry: with federal policy promoting value-based purchasing, there is an increased desire — on both the payer and provider's side — to purchase, generate, process and assess data in order to drive innovation and provide evidence of positive results in treatment.³¹ This can result both in more transparency around quality and pricing structures and creating an ecosystem that has some level of information comparison and collaboration.³² While antitrust law is usually concerned with information-sharing among competitors, as long as this data is not used to alter prices or other competitively determined terms it is perfectly legal.

Access to more (and better) data has tremendous potential and could advance care in profound ways. More specifically, it is almost impossible to imagine a health system that would be able to deliver value-based and community-based care effectively without accessing information about patient history, behavior and family or social

context. Social determinants of health have proven to be a crucial aspect of successful treatment. It is unsurprising then that both Amazon and Google³³ are looking to integrate into this space by leveraging the enormous amount of data they hold.

In the following section I explore the potential risks of using the framework described above to regulate this industry, especially in terms of what's overlooked or "unseen".

AFFORDANCES OF DATA CONCENTRATION

On the one hand, authorities should be concerned with the incentives behind mergers and acquisitions. While being acquired is an enticing way to capitalize investment on the startup side,³⁴ this might establish a precedent in which incumbent firms acquire nascent firms simply to eliminate competition thus stifling innovation in the mid-term. More importantly, vertical integration poses the harm of leverage and foreclosure³⁵: the idea that when a firm has a dominant position in one market, it has an advantage over its competitors to become a dominant actor in adjacent markets or lines of business by using the existing knowledge of its users. How data contributes to locking in this economic power is rarely explored by antitrust authorities.

PATIENT PRIVACY: A FUNDAMENTAL RIGHT

In addition to this, data privacy has arisen as a concern in recent years. Federal regulation has been in place since 1996 to safeguard this aspect in the healthcare industry in particular. The Health Insurance Portability and Accountability Act (HIPAA)

established patient — and thus, personal — rights over health data. Additionally, it stated provisions for security and privacy of medical information and set standard mechanisms for interchangeability and protection in electronic form.³⁶ In 2009, the Technology for Economic and Clinical Health Act (HITECH Act) strengthened civil and criminal enforcement of HIPAA and mandated widespread adoption of electronic health records (EHR).³⁷

As health becomes a tech- and data-intensive industry, government entities should consider concerns of privacy as a patient right rather than as a purchasable commodity.

As health becomes a tech- and data-intensive industry, concerns about privacy being a patient right rather than a purchasable commodity should be taken into account by government entities. While the above regulations are a correct step in this direction it is important to question the assumptions that drive them. Neoclassical economic theory would establish that privacy can be understood as a consumer preference and — as such — online platforms would work as any other market in which people choose the optimal amount of information they are willing to share.³⁸ Of course, such rigorous standards of privacy rarely emerge, especially in digital services where there is an inherent asymmetry of information that can disfavor users who don't really have the choice to consent to — or refuse — “terms of services.”³⁹

To the extent that privacy law and antitrust law can recognize the sheer power — both economic and political — of data-owners, regulation should play a crucial role in balancing this out to ensure that patients' data is stored securely, and its governance

is equitable and just. Crucial privacy goals should be: to establish clear penalties for security breaches (and guidelines to avoid them), thoroughly analyze when mergers and acquisitions can lead to one company holding too much of a single person's information, and heavily restricting information flows (i.e. when it should or should not be sold to third parties).

In the following section I explore what regulatory model would better serve the challenges described above and be more appropriate in addressing the areas that current antitrust doctrine might overlook or ignore.

AN ASSESSMENT OF THE STATUS QUO AND A NEW REGULATORY MODEL

Under the lens of **efficiency** and **equity** I describe the pros and cons of the status quo vs. the alternative regulatory model, and offer a recommendation. I define **efficiency** as the net value of updating regulation, detecting breaches, and enforcing the norm. To the extent that these costs are less than the dollar value of the harm consumers may face in the form of increased prices or worst services, the regulatory model can be said to be meeting its goal. I explore **equity** under the lens of data ownership and fair and inclusive governance. In particular, I analyze power structures that may be detrimental to patients, especially those of lower socioeconomic status and levels of educational attainment.

STATUS QUO

Congress originally passed the Sherman Act to respond to a fear of concentrated power and enforce laws that would keep markets open and free from industrial monarchs.⁴⁰ It was a law “for diversity and access to markets”⁴¹ concerned with limiting economic concentration in order to avoid the resulting unjust accumulation of political power.⁴² Even though the original objectives of antitrust understood consumer welfare as a broad term that incorporated numerous factors, policy in this realm has shifted in the last 50 years towards considering lower prices as the sole objective to preserve.⁴³ As a result, both agencies and courts have become very lax in terms of approving mergers and acquisitions if they offer lower prices to consumers. I offer a brief analysis of how this framework can be assessed in terms of the two criteria described above.

Efficiency: The DOJ and FTC coordinate frequently and both offer concrete guidelines that reduce regulatory uncertainty. Years of consistent decision-making has arguably deterred unwanted behavior, thus making it easier to detect felonies which reduces the cost of enforcement. Additionally, by neoclassical standards, teams from both agencies boast indisputable expertise, and cases have been processed throughout decades of work so that enough critical knowledge can guide new generations of analysts and regulators. Over the course of the years, these agencies have accumulated experience that supports their goal of making optimal decisions at the lowest possible costs. Under the prism of what the regulator should do in a market-based economy — that is, maintaining a limited role circumscribed around offering certainty and providing the correct incentives to deter

felonies — the current institutional infrastructure is efficient.

Equity: By excluding analyses of market structure, size and conflicts of interest,⁴⁴ the current competition framework overlooks certain risks of consolidation in healthcare. For instance, more access to data can enable insurance companies to select their clients even better and offer targeted products that discriminate more effectively based not only health status, but also on socioeconomic characteristics and behavior. For those who cannot protect their privacy as effectively — or lack the knowledge to understand the extent to which we have a “digital self” or footprint — this is especially detrimental. The current regulatory model also compromises equity by allowing companies to grow far too large. Current doctrine simply evaluates whether a firm chooses to exert market power — for instance through predatory pricing — rather than recognizing the affordances and leverage that comes from becoming a massive owner of data. In this sense, the status quo clearly fails in safeguarding a wider range of interests such as patient privacy, non-discrimination and stopping corporate lobbying. Additionally, it does not provide antitrust agencies with jurisdiction over auditing the use and control over data nor around controlling the dynamics of bargaining power.

ALTERNATIVE: SHARED REGULATORY SPACE AND STRATEGIC, TARGETED, ENFORCEMENT

Assessing and regulating healthcare consolidation in the digital age, while tackling the blind spots current tools miss, may be too costly a process for a single agency to undertake.

One concern in Administrative law⁴⁵ with overlapping governance structures is redundancy. However, Jody Freeman, a professor at Harvard Law School, poses that shared jurisdiction of certain regulatory actions is actually beneficial⁴⁶ and already present in several aspects of economic and social regulation. Multiple agency delegation, if coordinated correctly, can empower organizations with relative expertise and provide opportunities to test conflicting information. Additionally, it creates an ecosystem of shared accountability in which “red flags” are easily raised across the decision-making process. Finally, spreading out regulatory action allows Congress to concentrate efforts on specific goals and support particular agencies that respond to constituencies.⁴⁷

Multiple agency delegation can empower organizations with relative expertise and provide opportunities to test conflicting information.

Joint rulemaking at the federal level for the healthcare industry — defined by the legal scholar Jody Freeman as “an inter-agency regulatory negotiation”⁴⁸ — would allow for a broader set of goals to be protected in this space.⁴⁹ Models like this have been most notably adopted in financial regulation and in environmental protection since this type of governance structure allows for agencies in the same regulatory sphere to remedy inconsistencies and address conflicts that arise from newly adopted legislation. In order to achieve these efficiencies in healthcare, I propose that, in addition to antitrust governance and HIPAA-HITECH regulations, a new agency is created for regulation pertaining exclusively to data: its ownership, use, control and flow. This would allow for the new entity to develop key expertise and enforce

specific goals in relation to data abuses. Working jointly with all other relevant agencies would lead to a more comprehensive view of the risks associated with mergers and acquisitions, thus leading to better regulatory decisions.

Efficiency: Such a model requires agency coordination to minimize inconsistency and maximize the gains that come from diverse expertise and analyses. Initial trans-

action and communication costs between agencies can be contained by drawing on the experience of different federal agencies that have shifted towards this model. Since I am proposing the creation of a new agency, it is reasonable to assume that this would increase overall costs of regulation in comparison to the status quo. However, after an adaptation phase — and to the extent that effective administration and coordination exist — this model could lead to lower enforcement costs since it would reduce the probability of accepting mergers that should have been banned when considering risks that the status quo would have overlooked.

Equity: This regulatory model would explicitly include concern about a firm’s capacity to cross-leverage data, hence avoiding incumbent firms from growing into “too big to fail” corporations. A powerful and effective regulatory governance structure is crucial to defend innovation, open markets, and, ultimately, democracy: it provides government with enough power to counteract the leverage that current owners of data have. More importantly, a multiple-agency delegation would better

safeguard patients' rights by protecting their medical history from hacks, breaches and misuse. Finally, it would also avoid targeted marketing from discriminating against those who are less healthy, older and more vulnerable.

RECOMMENDATION

Create a new inter-agency model in which, through joint rulemaking, there is special emphasis placed on equitable data governance that protects patient privacy. Given the importance of expanding the way we think about government and its crucial role in defending our rights — especially when the digital age has allowed corporations to leverage enormous economic and political power — I believe that the status quo needs to shift. Healthcare is an area where equity has to govern policy, and the current regulatory framework used to address consolidation in this industry, is heavily lacking in this particular criterion. Additionally, a new regulatory model might increase costs initially, but such a model has the potential to unlock widespread expertise in the mid-term, and thus better mitigate the threats of gigantic industry players.

CONCLUSION

The digital age poses challenges that require governments to think more proactively and broadly about regulation. In order to protect people's fundamental rights, policy makers, regulators, and elected officials need to expand traditional definitions of consumer welfare and explore new tools to hold corporations accountable.

ENDNOTES

1. Other aspects to consider are substantial involvement from the government, the fact that payers are often different than the person receiving treatment, the asymmetry of information that governs most relationships (i.e. patient-doctor, payer-provider) and payment structures based on reimbursements from either public or private entities.
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MAPPING SOCIAL CLIMATE VULNERABILITY IN CALIFORNIA

by Kelly Armijo



MAPPING SOCIAL CLIMATE VULNERABILITY IN CALIFORNIA

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Edited by: Eli Kahn & Sana Satpathy

Climate change will disproportionately harm low-income communities, communities of color, and historically marginalized communities. While California has climate policies in place that prioritize social equity, there is currently no one framework for combining indicators of climate vulnerability with existing socioeconomic indices to identify the communities most at risk. This paper synthesizes existing state data on fire risk, extreme heat risk, and flooding risk and combines them with composite measures of socioeconomic climate risk to map social climate vulnerability in California, demonstrating how a composite framework could be created. When indices are combined, wealthy suburban and exurban communities are less at risk than suggested by their physical climate vulnerability alone, whereas certain urban neighborhoods and areas in the Central Valley are revealed to be at higher risk.

INTRODUCTION

Over the next century, California communities will experience a wide range of intensifying climate change impacts, from extreme heat, to sea level rise, flooding, drought, air pollution, and wildfires. While these effects will be felt by all Californians to some extent, low-income communities, communities of color, and historically marginalized communities will be hit the hardest. These communities already bear a disproportionate share of environmental pollution, while also facing socioeconomic and health challenges.¹ The cumulative impacts of race, poverty, and pollution make these communities more vulnerable to climate change impacts due to greater exposure, preexisting health conditions, and fewer resources to prepare for and recover from climate change events.² For example, a study of nine counties in California over

summer months found that for every 10°F increase in temperature, there was a 2.6 percent increase in cardiovascular mortality, with mortality highest among African Americans.³ This “climate gap” is crucial to consider as California policymakers develop climate change and adaptation strategies at the state and local level so as to prevent climate change from further exacerbating current inequities.

California has taken the lead in forming climate policy, and more recently, climate adaptation and resiliency planning, aimed at not only reducing the impacts of climate change, but also increasing California’s ability to respond to, withstand, and recuperate from climate events.⁴ Many of these policies and programs are centered on social equity in an effort to uplift the communities that will be hit hardest by climate change and that historically have been ex-

cluded from policy-making processes.⁵ For example, the state's Integrated Climate Adaptation and Resiliency Program (ICARP), established by Senate Bill 246 in 2015, explicitly defines and prioritizes vulnerable communities in California's future adaptation and mitigation actions.⁶ However, for these goals to be made actionable, the state must first identify the communities most vulnerable to climate change. Many tools and data sources exist that take steps towards mapping and defining indicators of climate vulnerability, yet no one framework or methodology exists that includes a full, comprehensive set of indicators of climate vulnerability that take into account existing socio-economic vulnerabilities and environmental health risks.⁷

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RESEARCH QUESTION

In light of the gap in tools described above, this paper explores how to quantify and map the disproportionate impact of

climate change on frontline communities in California so as to better inform climate adaptation and resilience policy-making. In answering this question, it's important to account for the cumulative factors that scale the climate impacts felt by vulnerable communities. Therefore, both social and climate factors must be considered when quantifying the disproportionate impact of climate change. This paper combines these factors into a social-climate vulnerability index at the census tract level to allow for a neighborhood-by-neighborhood comparison of California communities' vulnerability to climate change. In this way, policymakers can easily identify and prioritize communities that will feel the impacts of climate change most severely.

Climate change is a multiplier of the many interacting socio-economic and environmental health inequities that marginalized communities experience due to historical land-use and disinvestment policies. Therefore, social-climate vulnerabil-

ICARP Technical Advisory Council's Definition of Vulnerable Communities:

Climate vulnerability describes the degree to which natural, built, and human systems are at risk of exposure to climate change impacts. Vulnerable communities experience heightened risk and increased sensitivity⁸ to climate change and have less capacity⁹ and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/ or economic factor(s), which are exacerbated by climate impacts. These factors¹⁰ include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality.

ity is defined in this paper as a function of exposure, sensitivity, and adaptive capacity to account for cumulative vulnerabilities, where exposure refers to the “magnitude, frequency, and duration of climate-related events”; sensitivity refers to the “physiological and socio-economic factors that affect the degree to which a population is impacted by climate-related events”; and adaptive capacity refers to “the broad range of responses and adjustments to climate change available to communities”.¹¹ In addition, this approach takes into account regional, and even neighborhood, differences in the types of climate risks faced by communities. As we will see, this means that a well-off coastal community that may have high exposure to wildfires and flooding, but low sensitivity and high adaptive capacity, may have a lower social-climate vulnerability than, for example, a community in Oakland facing reduced exposure to climate events, but higher sensitivity and lower adaptive capacity.

Climate change is a multiplier of the many interacting socio-economic and environmental health inequities that marginalized communities experience due to historical land-use and disinvestment policies.

Finally, this research and geospatial analysis is guided by many sources, but looks largely to methods used by the California Energy Commission’s California Climate Change Center and the Pacific Institute in the 2012 white paper, “Social Vulnerability to Climate Change in California”¹², and the Asian Pacific Environmental Network in the 2019 report, “Mapping Resilience: A Blueprint for Thriving in the Face of Climate Disasters”¹³.

BACKGROUND

A robust analysis of social-climate vulnerability should include a wide range of indicators, data sources, analytical techniques, and input from experts and environmental justice communities. This paper is a preliminary attempt to quantify social-climate vulnerability, and so is limited in scope by a number of important factors – most immediately, data availability and processing power. The methodology and results that follow in no way serve as a complete solution for identifying vulnerable communities, but rather as an example to illustrate the importance of including socio-economic and health vulnerabilities in defining climate vulnerability. Although no one tool has yet been developed to comprehensively identify those communities most vulnerable to climate change, much research has been done to understand how to model climate vulnerability and which climate impacts, models, indicators, and data sources should be used as inputs.

A complete analysis of climate vulnerability should start with a full range of expected climate impacts, such as extreme heat days, sea level rise, extreme precipitation, mudslides, drought, cooling and heating degree days¹⁴, and wildfires. Each of these impacts present different hazards that will affect our built and natural environments in both the short and long term, in turn impacting communities’ infrastructure, economies, safety, and health. These impacts, their magnitude, and their resulting hazards will

vary by region; therefore, climate vulnerability must include climate model data that predicts the full set of climate impacts that communities will face on a local level.

Global climate models are complex simulations that project atmospheric changes based on a number of varying assumptions. These models usually simulate climatic changes at low resolutions spanning areas larger than 100 km² due to mathematical complexity and processing limitations.¹⁵ To project climate change impacts at a regional or local level, global climate model outputs must first be reduced to a finer spatial and temporal scale. Localized Climate Analogues (LOCA) is a widely accepted method used to statistically downscale global climate model outputs to a 1/16 degree spatial resolution (about seven km²) and a daily temporal resolution, making it possible to simulate climate impacts in California on a local level.¹⁶ In addition, there are more than 30 global climate models developed by experts around the world which each represent the atmosphere differently. To account for variation between different global climate models, projections should be based on averages from four LOCA downscaled global climate models identified by climate experts across the state as most representative of a range of future scenarios in California: HadGEM2-ES

(a warmer/drier simulation), CNRM-CM5 (a cooler/wetter simulation), CanESM2 (an average simulation), and MIROC5 (the simulation most unlike the others).¹⁷ Finally, given that increasing greenhouse gas emissions are the main driver of climate change, global climate models are

dependent on the amount of greenhouse gases estimated to be emitted in the future. This quantity is of course unknown; therefore, global climate models are simulated under varying greenhouse gas emissions scenarios, or Representative Carbon Pathways (RCPs). California's Fourth Climate Change Assessment uses two RCPs in its analysis, which for the purposes of determining climate vulnerability should each be calculated and mapped separately: 1) RCP 4.5, a medium emissions scenario in which greenhouse gas emissions level off around the middle of the 21st century and by the end of the century are lower than 1990 levels with average statewide warming of 5.6° F, and 2) RCP 8.5, a higher emissions, business-as-usual scenario in which greenhouse gas emissions continue to increase through 2050 and level off around the end of the century with average statewide warming of 8.8° F.¹⁸

Many socio-economic and environmental health factors increase climate vulnerability; however, some are more directly related to certain climate change impacts than others. For example, outdoor workers are exposed

to the elements for extended periods of time and already experience high rates of respiratory illness;¹⁹ therefore, they are particularly vulnerable to extreme heat events and smoke from wildfire events. A complete analysis of social-climate vulnerability should weight indicators based on their contribution to a community's exposure, sensitivity, and adaptive capacity. Although incomplete, an example of the types of factors that impact climate vulnerability given certain climate change impacts is provided

On average, California communities are anticipated to experience 44 extreme heat days per year through 2100.

complete analysis of social-climate vulnerability should weight indicators based on their contribution to a community's exposure, sensitivity, and adaptive capacity. Although incomplete, an example of the types of factors that impact climate vulnerability given certain climate change impacts is provided

below.²⁰ Many of these indicators are already in use in public health or environmental justice tools and much of the data required to create these indicators is publicly available, although they may come from varying sources, dates, and levels of resolution. Although beyond the scope of this paper, future research should consider how to process and combine a full set of such indicators into one mapping tool using existing data to create a complete definition and identification of social-climate vulnerability in California.

DATA

All climate data used in this paper is sourced from Cal-Adapt, an open-data website developed by the University of California’s Geospatial Innovation Facility, with oversight from the California Energy Commission.²¹ Cal-Adapt provides data and visualizations on a number of climate

change variables at the local level using LOCA downscaled global climate model outputs. Due to the size of Cal-Adapt’s spatial datasets and the requisite data processing capabilities, climate projections for California in this paper are based on global climate model outputs using RCP 4.5 from the CanESM2 model, which best represents average outcomes for California.²² Analysis in this paper is further limited to extreme heat, flooding, and wildfire events using the following datasets: historical observed daily maximum temperatures from 1950- 2013; daily maximum temperature projections for 2006-2100; coastal flooding projections during extreme storm events over five 20-year periods from 2000-2100; and annual wildfire scenario projections from 1954-2100 based on historical data of climate vegetation, population density, and fire history combined with downscaled LOCA climate projections.

Figure 1: Indicators of Climate Vulnerability as they Relate to Climate Change Impacts



Social vulnerability analysis is limited to an existing composite environmental justice score based on 20 indicators of pollution burden and population characteristics to account for socio-economic and environmental health factors. This data comes from CalEnviroScreen, a mapping tool developed by California's Office of Environmental Health Hazard Assessment that maps communities disproportionately burdened by, and vulnerable to, pollution so as to identify communities for climate investments and planning activities.²³

Climate adaptation and resilience policies centered on justice must be accompanied by policies aimed at resolving the baseline, historical inequities experienced by marginalized communities.

heat days per census tract, the average projected area burned by wildfires per census tract, and the average projected maximum inundation depth during a storm event per census tract. The overall climate vulnerability indicator is created by averaging these three variables for each census tract and taking the percentile rank. It's important to note that this approach relies on averaging, which compared to selecting maximum observations, has the effect of smoothing out the data and creating a conservative estimate of vulnerability.

METHODS

Combined Social-Climate Vulnerability Indicator

The social climate vulnerability index developed in this paper combines a climate vulnerability indicator and a social vulnerability indicator to create a ranking of census tracts by overall social-climate vulnerability. Given that climate change is a multiplier of existing socio-economic, pollution, and health factors, the social vulnerability indicator is multiplied by the climate vulnerability indicator to obtain the final social-climate vulnerability indicator.²⁴

Climate Vulnerability Indicator

The climate vulnerability indicator is based on projected extreme heat, wildfire, and flooding events. These variables represent the average projected number of extreme

The extreme heat indicator represents the average number of relative extreme heat days per year projected through 2100. This analysis defines extreme heat days as days with maximum temperatures above a local high-heat threshold so as to account for relative heat stress based on temperatures local populations are accustomed to experiencing. Local high-heat thresholds are calculated on a scale of 12 km² by: 1) taking each 12 km² grid-cell's daily maximum temperature observations from 1950 to 2013; 2) sorting these observations to find the 95th percentile historical observed temperature for each grid-cell, which serves as the local high-heat threshold; and 3) finding the number of days per year with projected temperatures above this local high-heat threshold for each grid-cell. The number of annual extreme heat days estimated for each grid-cell is then averaged over the 95 years of projections to find the average number of estimated extreme heat days per year per grid-cell. Finally, to de-

termine the number of extreme heat days at a census tract level, which may be larger than the 12 km² area over which extreme heat days were calculated, the number of extreme heat days is averaged over all grid-cells that fall within a census tract. Figure 2 demonstrates that much of California is anticipated to experience a high number of relative extreme heat days — on average, California communities are anticipated to experience 44 extreme heat days per year through 2100, with census tracts in Humboldt and San Bernardino counties projected to experience extreme heat for an average of two months out of each year.

The wildfire indicator represents the average annual area in hectares projected to burn in wildfires through 2100 using wildfire projections for the years 2019–2100. This area is found using a method similar to that of the extreme heat indicator and is also calculated on a scale of 12 km²: 1) the annual area projected to burn within each 12 km² grid-cell is averaged over 2019–2100 to find the average annual area estimated to burn in wildfires; and 2) this estimated area is then averaged over all grid-cells that fall within a census tract to find the average annual area projected to burn at the census tract level. Figure 3 shows that much of Central Northern California and coastal

Figure 2: Average Number of Projected Extreme Heat Days in California through 2100

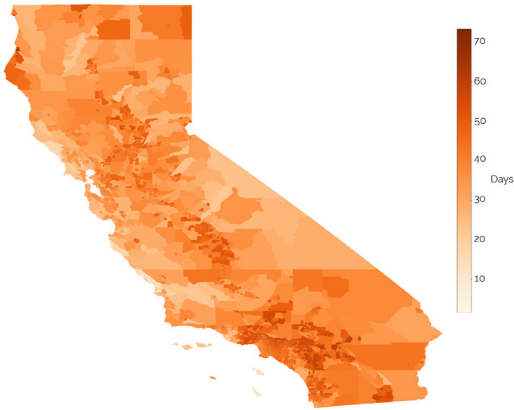


Figure 3: Average Area Projected to Burn in Wildfires in California through 2100

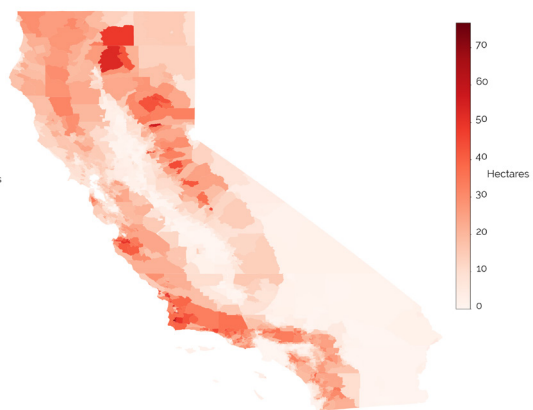


Figure 4: Maximum Inundation Depth during a 100 Year Storm in California



Southern California are expected to experience consistent wildfires through 2100. In fourteen census tracts, more than fifty hectares on average are projected to burn in wildfires every year, with six of these census tracts in Santa Barbara county alone, and four in San Luis Obispo county.

The flooding indicator represents the maximum depth of inundation projected during a 100 year storm through 2100. This is calculated similar to the extreme heat and wildfire indicators using a 12 km² area. The maximum projected inundation depth is found by taking the maximum inundation depth of each 12 km² grid-cell in California projected for each 20-year period provided by Cal-Adapt and averaging the maximum inundation depths for all five 20-year periods. This is then averaged over all grid-cells that fall within a census tract to create census tract level estimates. As can be seen in Figure 4, only coastal communities will experience flooding as a result of sea level rise; however, of those communities, 42 will experience maximum inundation depths greater than 20 meters, with Bay area communities expected to experience maximum inundation depths greater than 35 meters — the highest levels of flooding in the state.

Social Vulnerability Indicator

As previously discussed, in place of a full set of indicators representing social vulnerability, CalEnviroScreen data is used to approximate overall social vulnerability. CalEnviroScreen creates an overall ranking of census tracts by combining the following indicators of population characteristics and pollution burden: 1) Exposure Indicators: ozone, PM 2.5, diesel particulate matter, drinking water contaminants, pesticide

use, toxic releases from facilities, traffic density; 2) Environmental Effect Indicators: cleanup sites, groundwater threats, hazardous waste generators and facilities, impaired water bodies, solid waste sites and facilities; 3) Sensitive Population Indicators: asthma, cardiovascular disease, low birth weight infants; and 4) Socio-Economic Factor Indicators: educational attainment, housing burden, linguistic isolation, poverty, unemployment.²⁵ This analysis uses the overall CalEnviroScreen score as a proxy for social vulnerability.

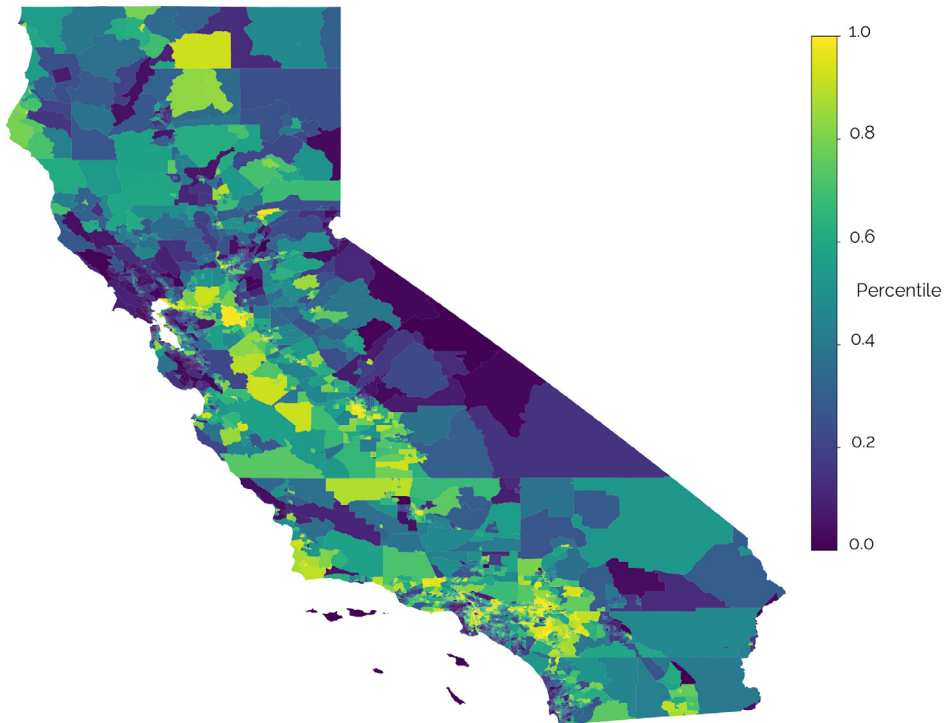
RESULTS

By comparing the results of the climate vulnerability indicator (Figure 5) and the social-climate vulnerability indicator (Figure 6), it's possible to identify the effect of including sensitivity and adaptive capacity via social and environmental health factors when considering climate vulnerability. Communities' vulnerability looks quite different when considering their sensitivity and adaptive capacity, on top of expected exposure. For example, Central Valley and urban communities are generally ranked higher by the social-climate vulnerability index than the climate vulnerability index. According to the climate vulnerability indicator, the top ten census tracts most vulnerable to extreme heat, flooding, and wildfires combined include census tracts across the state from Sacramento, El Dorado, Monterey, Santa Barbara, Nevada, Solano, Contra Costa, and San Diego counties (see Table 1: Top Ten Climate Vulnerable Communities in California). These results change significantly when factoring in CalEnviroScreen population characteristics and pollution burden—the top ten most vulnerable census tracts become those from just six counties: San Joaquin, San Bernardino,

Figure 5: California Climate Vulnerability Index



Figure 6: California Social-Climate Vulnerability Index



Fresno, Riverside, and Sacramento county (see Table 2: Top Ten Social-Climate Vulnerable Communities in California).

Zooming in on the Bay Area (Figure 7), urban communities increase in ranking when considering social and environmental health factors. Hunters Point, San Francisco moves into the top ten most vulnerable census tracts when considering social-climate vulnerability, yet when considering only climate vulnerability, census tracts from only Solano and Contra Costa

counties appear in the top ten most vulnerable census tracts.

CONCLUSION

These differences highlight how areas with high exposure, but high adaptive capacity and/or low sensitivity, are less vulnerable to climate change than areas with less exposure but lower adaptive capacity and/or higher sensitivity. Including sensitivity and adaptive capacity significantly changes the landscape of climate vulnerability in Cali-

Table 1: Top Ten Climate Vulnerable Communities in California

Census Tract	County	Social Vulnerability Score	Climate Vulnerability Score	Social-Climate Vulnerability Score
06067008513	Sacramento	81.90	100	39.33
06017030809	El Dorado	8.45	99.99	38.52
06053011700	Monterey	3.08	99.98	7.72
06083002604	Santa Barbara	0.0	99.96	0.012
06083002005	Santa Barbara	9.13	99.95	35.03
06057000801	Nevada	17.62	99.94	69.53
06095252000	Solano	14.37	99.93	57.85
06095250605	Solano	20.36	99.91	76.79
06013357000	Contra Costa	17.60	99.90	67.64
06073019002	San Diego	24.02	99.89	84.78

Table 2: Top Ten Social-Climate Vulnerable Communities in California

Census Tract	County	Social Vulnerability Score	Climate Vulnerability Score	Social-Climate Vulnerability Score
06077000801	San Joaquin	82.39	86.27	100
06071001600	San Bernardino	90.68	65.82	99.99
06019001100	Fresno	94.09	43.76	99.98
06071004104	San Bernardino	63.49	92.47	99.96
06077000300	San Joaquin	80.18	70.82	99.95
06065042902	Riverside	53.27	97.64	99.94
06065046700	Riverside	69.15	85.99	99.93
06065042505	Riverside	65.65	89.53	99.91
06077000900	San Joaquin	66.46	87.82	99.90
06071004900	San Bernardino	74.95	75.47	99.89

Fig 7: Comparison of Climate and Social-Climate Vulnerability in the Bay Area

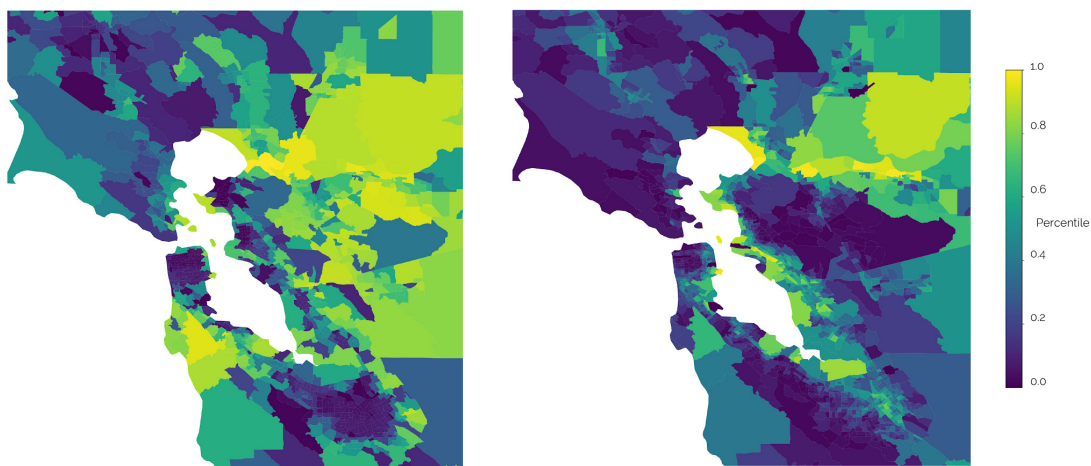
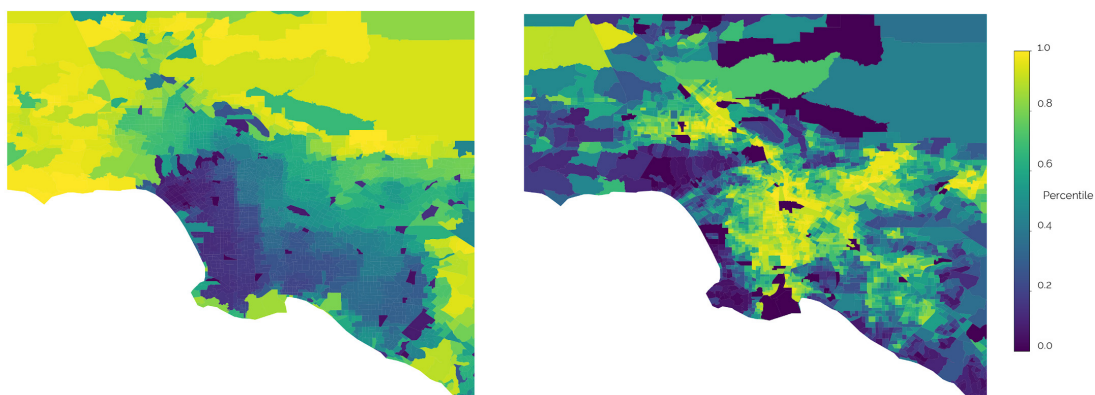


Fig 8: Comparison of Climate and Social-Climate Vulnerability in the LA Area



fornia, demonstrating that climate vulnerability can't be defined solely based on exposure, but must factor in the multiple and interacting socio-economic and environmental health factors that impact front-line communities. This type of social-climate vulnerability analysis is critical in informing California's climate adaptation and resilience policies to prevent vulnerable populations from bearing the brunt of climate impacts and costs, and instead strengthen community resources and resilience.

As the state moves towards including equity and environmental justice concerns in its climate adaptation policies, further work

must be done to combine a full set of indicators, such as those suggested in this paper, into a mapping tool similar to CalEnviroScreen. In addition, a climate adaptation and resilience policies centered on justice must be accompanied by policies aimed at resolving the baseline, historical inequities experienced by marginalized communities. Finally, the use of data should never replace the voices of vulnerable communities, but should instead be used to support community advocacy efforts and empower the lived experiences of frontline communities. Therefore, the creation of a social-climate vulnerability tool must include community input to ensure it accurately reflects the

lived experience and concerns of frontline communities. Combined with community input and expertise, a social-climate vulnerability tool is critical in assisting policymakers in identifying communities most disproportionately impacted by climate change and designing climate adaptation strategies that prioritize and strengthen these frontline communities.

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COMMUNITY-BASED CLIMATE RESILIENCE

by Irene Farnsworth &
Natasha Mehta



COMMUNITY-BASED CLIMATE RESILIENCE

BEST PRACTICES AND OPPORTUNITIES FOR THE CALIFORNIA LABOR MOVEMENT

IRENE FARNSWORTH & NATASHA MEHTA

Edited by: Spencer Bowen & Ben Menzies

Climate change will disproportionately impact low income communities and communities of color in California. Although climate resilience has often focused on the built environment, the capacity for communities to recover from environmental shocks also requires resilient “soft systems.” Community-driven planning processes can support equitable climate outcomes by addressing climate risks while also building social cohesion and community resilience. Expert interviews, literature reviews, and case studies reveal three opportunities for investment in community-based climate resilience: community health, workforce development, and disaster preparedness. Disaster preparedness offers guidance for community-based climate resilience programs because it focuses on preparing communities for the variety, intensity, and frequency of shocks. This report recommends designing program priorities, program elements, and measurement indicators through co-design methods with community members, which can help ensure that benefits are direct and meaningful for the targeted community.

INTRODUCTION

Climate change will affect all residents of California, and it will particularly impact the livelihoods of low- and moderate-income residents. This disproportionate impact is due to a cascading, interrelated set of issues: low-income communities and communities of color are more likely to live in areas with existing environmental hazards, poor infrastructure, and lower access to healthcare because of redlining, exclusion from decision-making, and poverty. These existing disparities, combined with a poor track record of helping these types of communities when disaster does occur, means that low- and moderate-income Californians should be the priority when designing climate change resilience

programs in the state. The implications for workers are broad: climate change impacts both the type of work that will be needed (e.g. green jobs) and the way that current jobs are done (e.g. outdoor manual labor).

Climate resilience is a broadly used term that is rarely well defined. This report draws on the definition provided by the Intergovernmental Panel on Climate Change: “A combination of resistance to frequent and severe disturbances, capacity for recovery and self-organization, and the ability to adapt to new conditions.”¹ In addition to this definition’s emphasis on social resilience, we also use the term “climate resilient” to refer to the capacity of infrastructure, or the built environment, to withstand damage due to climate change. Similar terms,

such as “community-based resilience” or “equitable climate resilience,” emphasize activities or outcomes determined by and for a specific community. These activities typically focus on remedying inequitable outcomes caused by larger socioeconomic forces, such as housing (in)stability or (in)equitable land use. Equitable climate preparedness planning elaborates on these concepts by describing how to create equitable climate outcomes by engaging in community-driven planning processes, simultaneously addressing climate risks and building community empowerment, social cohesion, and a shared sense of purpose.²

Disaster preparedness and response offer guidance for community-based climate resilience programs, both in the form of

best practices and lessons learned. Disaster preparedness has historically been top-down in approach and drastically underfunded in comparison to disaster response funding: Creating climate resiliency requires a bottom-up approach and increased up-front mitigation and adaptation funding to actively prevent loss in advance of unpredictable disasters as the climate changes and disasters become more frequent. Complicating this effort is the fact that disaster risk reduction in the past depended upon predictability in the types and scales of specific disasters. Resilience has emerged as the preferable paradigm for disaster preparedness because it focuses on preparing communities for the variety, intensity, and frequency of shocks that may

occur – whether those shocks are from climate change, political upheaval, or other human-made disasters.³

COMMUNITY RESILIENCY NEEDS IN THE UNITED STATES

Climate resiliency needs in California are well documented, with literature and research on different types of climate risk (e.g. flooding, wildfires), types of community (e.g. low-income communities),

and economic impacts (e.g. job loss and change, financial loss from disasters). The findings of this needs assessment reflect our understanding that the majority of existing analysis on climate resilience focuses on the built environment; this needs assessment adds

Creating climate resiliency requires a bottom-up approach and increased up-front mitigation and adaptation funding to actively prevent loss in advance of unpredictable disasters as the climate changes and disasters become more frequent.

to current literature and research on “soft systems” resilience involving social, psychological, and economic systems.⁴ These issues are critical to the needs of low-income people because they are among the most likely to be impacted by the negative social effects of climate change. The needs assessment surfaced the following three areas for structuring people-focused climate resilience investments:

1. Community Health
2. Disaster Preparedness
3. Workforce Development

COMMUNITY HEALTH

Public health organizations around the world agree that climate change is the single greatest threat to human health today.⁵ Underlying public health status is a key predictor of vulnerability: if a community is unhealthy at baseline, then it will not be resilient to climate change. Because of this, climate change's health impacts will affect people of all socio-economic and geographic statuses, but will affect low-income people the most:⁶ "The direct health impacts of climate change are due primarily to heat-related morbidity and mortality, and injuries and fatalities associated with other extreme weather events such as flooding, severe storms, or wildfires. [...] Of even greater concern, though, is that climate change threatens our life support systems. Humans cannot live without clean air, water, food, shelter, and security. Climate change threatens these all."⁷ Consequently, most efforts in the United States to understand and mitigate the effects of climate change on people are housed within public health departments and agencies. The public health field is a critical member of climate resilience efforts and should be consulted and involved with local and regional efforts.

As previously defined in this report, a community's resilience to climate change is a combination of resistance to frequent and severe disturbances, capacity for recovery and self-organization, and the ability to adapt to new conditions. Linda Rudolph, the director of the Public Health Institute's Center for Climate Change and Health, describes the connection: "If a neighborhood is prone to flooding on a normal basis, or already has low air quality, then natural disasters will tip them over the edge [...] targeting any issues that make a community unhealthy will make them more resilient."⁸ These health interventions, therefore, are far more expansive than those traditionally defined as "health-related," from housing stabilization to economic opportunity to the removal of toxic sites in proximity to residential neighborhoods.

Mental health is another soft-systems impact of climate change that gains less attention than is warranted. Studies have shown that climate change has already had serious global implications on mental health, including higher rates of depression, anxiety disorders, post-traumatic stress, substance abuse, and suicide - all of which are expected to worsen as the effects of climate change are felt more acutely and broadly.⁹ These effects are also more likely to be felt by vulnerable groups including children, elderly people, those with pre-existing mental health issues, and people living in poverty.¹⁰

DISASTER PREPAREDNESS

Climate change is altering the way that communities must prepare for disasters. Disaster preparedness has historically used calculations of how likely and how large disasters are likely to be using models based on historical data; climate change has made the size and likelihood of disasters more unpredictable, making planning for them more challenging. Longer droughts, more extreme and sporadic rainfall, and higher temperatures have increased wildfire extremity, landslides, drought-related economic impacts, and heat-related deaths and illnesses, and most communities are inadequately prepared to respond.¹¹

Exacerbating the impacts of changes in frequency and intensity of disasters due to climate change, the United States has long under-invested in disaster preparedness. Out of all federal spending on flood risk reduction, 90% of funds are allocated in reaction to disasters rather than in forward-looking mitigation.¹² This spending pattern is inefficient for two reasons: 1) it is less expensive to prevent disasters than to respond to them, and 2) spending during disasters is often chaotic, resulting in inequitable or unaccountable distribution of resources, and frequently misses communities that need resources.¹³

Increasing funding for disaster preparedness is not enough. In order to create climate resilient communities, community-led and centered preparedness is necessary. Traditionally, disaster preparation is very top-down, led by large agencies that do not work closely with community members. As a result, programming and policies often do not focus on low-income communities and communities of color. Ana-Marie Jones, the former executive director of Alameda Collaborating Agencies Responding to Disasters (Alameda CARD), described how current disaster preparation is designed, and how it should change: "Current disaster prevention and climate change mitigation messaging isn't resonating with people because it's fear-based. [It] doesn't motivate people or make them want to change because it makes them feel helpless and hopeless."¹⁴ Jones referred to public programs encouraging people to create disaster kits and plans; these programs miss the mark with low-income communities who cannot afford to stockpile food or buy specialty supplies for go-kits. Disaster kits are one example among many public instructions that miss the mark among the most vulnerable communities. Directives that are unrealistic for people's lived experiences and messaging that scares people about the future inadequately prepare most people for potential disasters.

Effective disaster preparation training should make people feel empowered, understand their capabilities and options, and equip them with the leadership skills and mentality needed to protect themselves and others in the face of disaster.¹⁵ Shamika Ossey, the director of Watts Community Emergency Response Team (CERT), described her view on community-based training: "We are subject matter experts. [...] Disaster may not resonate [with the community] but knowing they have the skills to apply to any situation [does]."¹⁶ By making people feel capable and understanding the risks their community faces, the community will become more resilient than participating in a traditional, top-down program approach.

WORKFORCE DEVELOPMENT

Climate change has already influenced the growth or shrinkage of employment sectors and the types of work that people do. Our economy is moving away from emissions-heavy industries, eliminating the need for some jobs while creating new ones in renewable sectors and green infrastructure. Conditions for outdoor and indoor workers are being impacted by changes in weather and air quality.¹⁷ There is increasing strain on sectors like the health care industry as heat-related and respiratory illnesses increase.¹⁸ Emergency responders, health care workers, firefighters, utility workers, agricultural workers, manufacturing workers, and transportation workers are all likely to be impacted on the job by exposure to heat, air pollution, extreme weather, biological hazards (new diseases and disease vectors), and indoor climate issues like aging “sick buildings,” which have poor indoor air quality or are made with hazardous materials.¹⁹

Focusing workforce development and setting standards for workforce safety with climate change in mind are two key areas of focus to create more resilient working class communities. Unions should be proactive in ensuring that green infrastructure and infrastructure upgrades, new industries in solar, changes in transportation, healthcare, and construction overall create new good union jobs, not just contract employment.²⁰ State level climate resiliency plans are often disconnected from current workforce training. We need further research into workforce development gaps, opportunities to create high quality green jobs, and increased collaboration between labor organizations and climate mitigation sectors.²¹

In addition to these workforce development questions, California leads the country in income inequality. Mitigating climate change will create opportunities to either reinforce this status quo or chart a more economically equitable direction for the state. A recent report on climate equity and labor impacts from the UC Labor Center warns that “we can tackle the challenges of inequality weighing on the state and the nation through climate policy, and if we don’t, the inequities in our overall economy are likely to be reproduced in the emerging clean energy sectors.”²² For example, switching to renewable energy sources from fossil fuels results in a loss of jobs in refineries: creating high-paying union jobs in the clean energy sector can mitigate this job loss. Decreasing income inequality is a critical component of cultivating climate resilience in California and should be a primary goal of any program regardless of whether it targets workforce development or worker-related issues.

BEST PRACTICES IN COMMUNITY-BASED CLIMATE RESILIENCY PROGRAMS

Ample literature details the design process of equitable, community-centered climate resilience programming. Because of the breadth and depth of guidance in the field, it is essential for policymakers and planners to digest and implement these takeaways. Best practices in community-based climate resiliency programs are outlined below. They serve as a summary of our findings from interviews, case studies, and key literature.

COMMUNITY SELECTION AND ENGAGEMENT

Clearly Define the Target Community

Policymakers should explicitly define the “vulnerable community” being targeted. If using this term in a policy or grant program, we recommend clarifying what “vulnerable” means, since it can be defined in several ways in the context of climate change. Wealthy coastal communities are vulnerable to sea level rise but may have more resources to handle impacts compared to vulnerable communities that are socioeconomically disadvantaged.²³ Similarly, be specific if using terms like disadvantaged, low-income, and the like. This will ensure that programming actually helps the intended recipients. It’s imperative to promote the inclusion of marginalized stakeholders including communities of color, children, women, the elderly,

people with disabilities, and people who are undocumented. These groups are often overlooked by top-down disaster risk prioritization.²⁴

Engage Community Members Through Participatory Methods

Policymakers should engage community members and ask for feedback on draft plans, legislation, and program design; similarly, get community feedback on any implementation plans for policies or programs. There are many resources that outline how to design engagement activities. The SB 1000 Implementation Toolkit, created by the California Environmental Justice Alliance (CEJA), provides a step-by-step guide to creating meaningful community engagement processes, including how to identify and reach out to existing community organizations to get started. The toolkit identifies recommendations for the order of planning activities, interactive activities to do with community members at meetings, and incorporation of local governance to blend stakeholder groups’ needs. We recommend the consultation

of this toolkit when designing a project, policy, or program that affects vulnerable communities.

It is essential that policymakers ensure community buy-in and have a strong understanding of their commitments before starting a program.

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ous, many organizations neglect to do this groundwork and often fail because communities and the program were misaligned from the beginning.²⁶

PROGRAM DESIGN

Define Resilience and Program Priorities with the Community

It is important to consider that the characteristics of a climate resilient household differ across livelihood types, genders, and geographies. While universal climate vulnerability tools have been developed, these characteristics are still difficult to evaluate at a community level.²⁷ Because of this, the United Nations Development Programme has developed the Community Based Resilience Analysis (CoBRA) Assessment, a toolkit that can be used to guide communities through a localized resiliency assessment. This tool gives members of a community the opportunity to define metrics of resilience based on their lived experience. Implementation of this assessment across four communities in Uganda and Kenya revealed that current program prioritization is often mismatched with community-defined indicators.²⁸ In the study, community members consistently highlighted access to higher education, access to clean water, and peace and security as priority characteristics of a resilient community. However, expansion of secondary or tertiary education is rarely prioritized in policy interventions to address climate change. The communities' top-rated policies often involved the expansion or im-

provement in quality of education, water, health, transportation, and markets.²⁹ This suggests that policymakers need to better understand the links between these broader needs and reassess their risk reduction and resilience strategies.

Fund The Community First

Programs should deliver direct and meaningful benefits to program recipients. Often, programs working on climate resilience deliver dispersed or trickle-down benefits. This strategy dilutes the benefits and negates the bottom-up approach that is most recommended for community-based resilience. The more directly the dollars go to impacted communities, and the more the funding matches the scale of need in the community, the better.

Policymakers need to better understand the links between the community's broader needs and reassess their risk reduction and resilience strategies.

On this note, the Greenlining Institute defines “meaningful” community benefits as ones that are “Relevant and useful to the community [...] informed by community-identified needs.”³⁰ In low-income communities, “money is the number one thing [that is needed] to adapt to climate change.” This definition emphasizes the importance of community involvement and leadership in each part of a funding process, following the guidelines described in community participatory processes. Because this type of community involvement takes time and resources, funders should allocate resources to this process and those involved as part of any funding initiative.³¹ Greenlining highlights the California Strategic Growth Council’s Transformative

Climate Communities (TCC) program as an exemplar of how to deliver direct and meaningful benefits through grantmaking. TCC programs must engage directly and substantially with communities throughout each phase of a project. Additionally, TCC dollars must go to communities that fall within the top 5% of Disadvantaged Census Tracts based on data from CalEnviroScreen.³² CalEnviroScreen's map of disadvantaged communities is determined through a combination of climate, economic, social, and health indicators.³³

Program Elements

After getting local stakeholder and community buy-in, successful climate resiliency programs combine multiple elements when possible. Good examples include workforce development, climate adaptation activities, and strategies to prevent displacement of residents during infrastructure improvements.³⁴ In any program, building community expertise, leadership, management, and skills is a key part of creating a resilient community.³⁵ For example, the Watts-CERT program is an educational training program for community members to gain basic disaster response skills such as light search and rescue, team organization, and disaster medical treatment.³⁶ Although it focuses on natural disaster response, the training prepares the community for other kinds of shocks. It also builds a community-level support system and exposes participants to new career paths.³⁷

Although it may sound reductive, a program designed to achieve "resilience" can best be measured by a decline in vulnerability of the target community.

It is important to put the people being served at the center of a program by focusing on building capacity and leadership among participants. Focusing disaster preparedness entirely on assembling plans and resources (e.g. emergency kits) ignores the reality of poor people who cannot spare extra food and money to stock for a potential future threat when there are urgent demands on these resources today. This type of messaging is isolating to these groups and contributes to lingering apathy and helplessness. It is more helpful to ensure that people have the skills and knowledge of what to do when a disaster occurs.³⁸

Measurement

Measurement and evaluation of a program's success is critical to program design. Identifying program goals is the first step to designing a measurement process by asking what standard the program will hold itself. If policymakers are unable to measure the ultimate goal (e.g. better community cohesion in the aftermath of a climate-related disaster), then they should determine what intermediate goals or outcomes are measurable and would logically occur based on the program.

Although it may sound reductive, a program designed to achieve "resilience" can best be measured by a decline in vulnerability of the target community. Indicators of a community's vulnerability to climate change have been outlined by a variety of key organizations and can serve as guidance when developing measurement goals and outcomes for a program.

Mapping Resilience identified four comprehensive frameworks that measure multiple exposures to climate risk, assess population sensitivity to risks, and quantify adaptive capacity (See Table 1).³⁹ Similarly, Cal EnviroScreen uses environmental, social, and health information to produce a climate vulnerability score for each census tract in the state.⁴⁰ These indicators reinforce that climate vulnerability must be measured by a combination of factors; not simply a community’s risk to exposure. A community’s resilience is highly dependent on other factors that influence their sensitivity to risks such as poverty or ability to access resources.

These holistic indicators and measurement tools are crucial in order for practitioners to evaluate their impact, communicate results, and compare vulnerability across communities. In addition, it’s important to collect local qualitative data in order to capture

indicators that are more contextually specific. Measurement of contextual indicators can inform how a program is impacting local drivers of resilience and can ensure that program goals are aligned at a community-level. UNDP recommends using a combination of universal and contextual indicators for effective program measurement.⁴¹

RECOMMENDATIONS FOR POLICY MAKERS

The initial process of community engagement and planning is often the most time-intensive and challenging. We see opportunities for policymakers to leverage existing community networks in order to reduce this burden. Communities with high disaster vulnerability but with existing strong forms of community cohesion (e.g. unions) may be good options for program pilots.

Table 1: Climate Vulnerability Indicators (From Mapping Resilience)

Exposure	Temperature, Wildfire Threat, Flood Risk, Drought Risk, Air Quality
Sensitivity to Risk	<p>Demographics: race/ethnicity, linguistic isolation, poverty, percentage of households with children, elderly, foreign-born, or disabled members</p> <p>Socioeconomic Status: unemployment, educational attainment, income inequality using GINI coefficient, health insurance coverage, food insecurity, voter participation</p> <p>Housing: percentage of renters, affordability, average age of housing stock</p>
Adaptive Capacity	Vehicle Access, Transit Access, Medical Facilities, Emergency Services And Responders

There are ample resources, guides, and academic experts on this subject. What is often lacking is implementation. We recommend that policymakers harness existing research and build a network with organizations already doing this work to support implementation efforts. Ensure that when policy is passed, it funds local community planning and provides resources to those who will be doing the job and the communities being served. Compelling and comprehensive guides to program design, implementation, and measurement include:

1. SB 1000 Implementation Toolkit by California Environmental Justice Alliance
2. Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs by Greenlining Institute
3. Mapping Resilience by Asian Pacific Environmental Network Pan
4. Community Based Resilience Analysis (CoBRA) Implementation Guidelines by the United Nations Development Programme

We recommend policymakers use the methods outlined in this report to conduct further research into worker-specific climate impacts at a local level. Additionally, further research is required in other areas of concern, specifically workforce needs. Policymakers have an important role to play in ensuring that good jobs and climate resilience grow together.

Climate resilience is complex and multidimensional; policymakers cannot realistically focus on all aspects of it. We recommend the use of a theory of change to create a

climate action plan: determine what outcomes are most important to community members and map how the core competencies of stakeholder groups can best be harnessed to address them.

This analysis of community-based climate resiliency highlights the importance of co-design methods, the inclusion of marginalized groups as active participants in program design and enactment, and programs that generate community capacity to respond to a variety of shocks. Our findings indicate that these programs are important, effective, and severely underrepresented in the landscape of climate change interventions. Equity-focused programs also require intense, sustained resource commitment in the form of time, money, and people. While we ultimately recommend policymakers pursue and support community-based resiliency work, it is important to recognize the tradeoffs, especially if the top priority is scalability. In authentic community-based program design, interventions must be context specific and driven by local community knowledge; program planning must be well-resourced and funds should be direct. While methods and planning processes can be scaled, the program curriculum may be varied based on community needs. On a state level, this means that programs must have enough built-in flexibility in order to accommodate localized needs and support people working directly on the ground.

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An aerial photograph of a suburban residential neighborhood. The image shows a grid of streets with various houses, some with red roofs, some with grey roofs, and some with solar panels. There are trees, lawns, and parked cars visible. The overall scene is a typical suburban residential area.

TOWARDS A MORE CENTRALIZED REGIME OF LAND USE REGULATION

by Edwin Sun

TOWARDS A MORE CENTRALIZED REGIME OF LAND USE REGULATION ALTERNATIVE MODELS OF GOVERNANCE FOR SURPLUS AGENCY LAND IN CALIFORNIA

EDWIN SUN

Edited by: Dylan Crary & Jack Duffy

Recent legislation and court rulings have increased the policy relevance of the State of California's Surplus Land Act, which requires thousands of local governments across the state to offload their excess land for the purpose of developing affordable housing. This paper argues that the Legislature should reform the Surplus Land Act so that the state government administers and supervises housing development on excess government lands, even though these lands are currently held by local governments. Drawing from scholarship on the history of city planning and as well as economic research, this paper characterizes the California housing crisis as a classic economic shortage exacerbated by exclusionary racial policies. Supplemented by interviews with government officials, this paper concludes that the state's central government has greater expertise and appetite for overturning exclusionary housing policies than local governments.

INTRODUCTION

California is in the grips of a historic housing shortage. The scale of the human toll is staggering: 5.9 million households in the state are unable to afford the cost of housing. About 62 percent¹ of these households can be found in the Los Angeles and San Francisco regions, where the market rent for a one-bedroom apartment stands at \$1,755² and \$3,720³ per month, respectively. The median price for a house in the state now hovers at \$600,000.⁴

Across all major US metros, the San Francisco Bay Area had the widest socio-economic disparities between inbound and outbound migrants. On net, low-income households are departing from the Bay

Area, while the region attracts an influx of households earning more than \$100,000 per year. Nearly 40 percent of the Bay Area's out-migrants are households earning less than \$50,000 a year. Black and Latino out-migrants are heavily overrepresented in the latter group. In fact, black and Latino families in the lowest third of the income bracket were roughly twice as likely to move out of the Bay Area compared to their counterparts in the highest third.⁵

Statewide, there is simply too little new housing and it is too difficult to build housing. The McKinsey Global Institute estimated that, since 2005, the state has added only 308 new units of housing for every 1,000 new inhabitants—and therefore must build 3.5 million units of housing by 2025

in order to fill that gap.⁶ In the state's economic centers, where the imbalance between jobs and housing is most acute, the need for new housing is all the greater. The Bay Area saw 5.4 new jobs for every unit of new housing constructed between 2011 and 2017.⁷

Homebuilders in California struggle to deliver more production because of limited land, high cost of materials, high cost of labor, and regulatory restrictions. Regulation is one of the only drivers of construction cost that is directly under the control of policymakers. Regulations in force today contribute to lengthy and complex approval processes on project dimensions such as the building's use, environmental impacts, building codes, and rules around labor and procurement standards.⁸ The economists Edward Glaeser and Joseph Gyourko estimate a strongly positive relationship between the length of project regulatory approvals and the cost of housing.^{9,10}

While the causes of the statewide housing shortage are multifaceted, this article is primarily concerned with regulation of land use. This article will use the terms "entitlements process" and "land use regulation" interchangeably to mean the process by which governments control the character of their built environment. In California, as in much of the United States, the entitlements process is generally administered at the municipal level, and involves such concepts as zoning, permitting, and design review. Unique to the Californian context is

the California Environmental Quality Act (CEQA), which additionally requires various levels of environmental impact analysis on development projects.

While land use regulation can be harnessed to mitigate pollution impacts and monitor quality of the housing stock, the history of these tools is inextricable from the history of exclusionary zoning and economic segregation. Indeed, we can trace a direct line between today's racial inequities in housing and the racist housing policies of yesterday.

While land use regulation can be harnessed to mitigate pollution impacts and monitor quality of the housing stock, the history of these tools is inextricable from the history of exclusionary zoning and economic segregation.

A number of scholars have documented how zoning decisions in the 20th century were motivated by racial animus. After the end of the Reconstruction period in the United States, a large number of Southern cities enacted racial zoning to enforce the nascent system of racial segregation. In 1917, the Supreme Court issued a ruling on *Buchanan v. Warley* that declared the City of Louisville's racial zoning ordinance to be unconstitutional. Scholars have convincingly shown that these ordinances did not simply fade into history; they mutated, often shifting from explicitly racist rationales to economic ones, and continued to proliferate as the African American population grew across almost all major cities in the country.¹¹

Richard Rothstein retells the story of President Warren Harding's Advisory Committee on Zoning and how its membership of committed segregationists in 1921 promoted zoning policies that ultimately resulted

in racially homogenous neighborhoods. Frederick Law Olmsted, Jr., a member of the Committee and a former president of the American City Planning Institute once told city planners in a speech that, "in any housing developments which are to succeed, [...] racial divisions [...] have to be taken into account. [If] you try to force the mingling of people who are not yet ready to mingle," their planning could not flourish. Having shifted to economic rationales as justification for their former explicitly racist zoning, planners were able to evade judicial scrutiny. Rothstein recounts that, starting in 1926, the Supreme Court began to uphold zoning rules that banned apartment buildings in single-family neighborhoods. Elaborating on its decision, the court wrote, "the apartment house is a mere parasite, constructed in order to take advantage of the open spaces and attractive surroundings created by the residential character of the district." Since that ruling, white suburbs across the country adopted exclusionary zoning ordinances to prevent low-income families from living near them. They used requirements around minimum lot sizes, single-family zoning, and bans on multi-unit housing to ensure that homes in their towns would be unaffordable to people they saw as undesirable. In other words, city planners have historically used all the policy tools available to them to drive up home prices for the express purpose of excluding poor and minority households.¹² California is no exception in using city planning processes against racial minorities. In the two decades following World

War II, the Oakland Planning Commission declared that heavily black West Oakland was "blighted" and proceeded to demolish almost 10,000 units of housing there to make way for downtown redevelopment, including running three major interstate freeways and a new Bay Area Rapid Transit (BART) line through formerly residential areas.¹³

These brief histories offer only a glimpse into the racialized motivations undergirding the form of the American city. It is impossible to discuss the urban built environment or economic disparities in the United States without confronting the racism baked into the ideologies, sensibilities,

and, ultimately, policymaking that shaped our cities. The scope of confronting both the unaffordability of housing and the racist legacy of neighborhood segregation is enormous. Short of offering a clean break from past injustice,

the remainder of this article focuses on steps that lawmakers can take to mitigate inequities.

THE SURPLUS LAND ACT AND THE PROBLEM OF THE STATUS QUO

California's Surplus Land Act, enacted in 1968, requires almost all government entities – including local governments and subdivisions of the state – to dispose of their unused properties by offering right of first refusal to affordable housing developments. Crucially, last year's legislative session saw the governor sign amendments to the Surplus Land Act to clarify that char-

Perhaps the most significant factor in local governments' failure to zone for new housing is community reluctance to carry out the process in a way that truly facilitates home building.

ter cities fall under the Act's purview¹⁴ and to require localities to report their surplus lands for inclusion in the state's centralized database of excess land.¹⁵

Until 2019, a number of local governments attempted to circumvent the statute's requirements. As recently as November 26, 2019, the City of San Jose lost an appeals court challenge in which the city argued that the state could not compel the disposition of municipal lands in the manner prescribed by the Surplus Land Act.¹⁶ Under current law, disposed surplus land is still subject to municipal land use regulations, even though many governments offloading properties are actually state agencies and local subdivisions of the state. This means that many non-municipal government properties are forced to move through the entitlement processes of some historically exclusionary city governments. Since cities across the state continue to pursue exclusionary zoning policies, however, it is crucial to examine whether cities should remain the primary agents of land use regulation for the Surplus Land Act process.

The status quo system of municipal land use regulation has not produced economically efficient results. Microeconomic theory predicts that the effect of regulation on suppliers is to increase marginal costs. Since the marginal cost curve in a neoclassically competitive market is the supply curve, regulation results in a lower quantity supplied at every price.

Homeowners frequently allege that a lower quantity of housing is optimal and that poor land use decision-making – such as allowing multi-family housing – will lead to the erosion of property values. Howev-

er, a review of the literature on this found little evidence of such an effect. Using a repeat sales data set on home prices in Wisconsin to study the effect of Low-Income Housing Tax Credit (LIHTC) multifamily developments, researchers were unable to find any link between the low-income housing projects and local home prices. They concluded that a key recommendation should be to locate more low-income multifamily developments in affluent communities.¹⁷ Glaeser and Gyourko summarize housing externalities research noting: "the gap between price and production cost can be understood as a regulatory tax, which might be efficiently incorporating the negative externalities of new production, but typical estimates find that the implicit tax is far higher than most reasonable estimates of those externalities."¹⁸

The empirical evidence from econometric studies is clear regarding the cost of the regulation: housing shortage and higher prices. Using longitudinal data from California cities, Jackson (2016) investigated the relationship between municipalities adopting additional regulations and the number of new construction permits issued and found that "each additional land-use regulation adopted reduced multifamily and single-family permits by an average of more than six percent and three percent, respectively, and that regulations reducing allowable density had even larger effects." Another group of researchers studied the effect of rising rents in economic centers on decreased mobility and projected that, if workers and capital had been able to move freely between 1964 and 2009 to respond to higher wages, the nation's gross domestic product would have been 10 percent higher in 2009.¹⁹ Furthermore, the burden of regulation has only grown heavier in re-

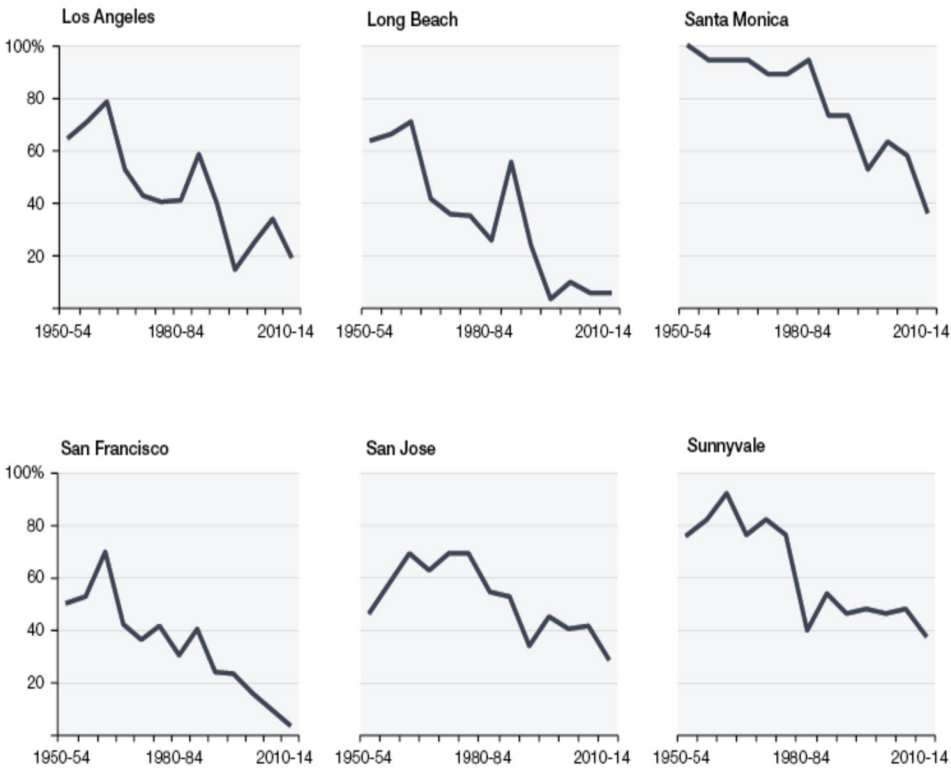
cent decades. One analysis using a data set of state appellate court decisions found that there were 157 percent more land-use cases in 2010 than there were in 1980, and 82 percent more zoning cases in 2010 than in 1980; over the same period, the U.S. population grew only 37 percent.²⁰ The finding that regulation has become more onerous may explain why homebuilding has fallen dramatically in California during this period,

These regulations can touch almost any aspect of a residential development, but some of the most burdensome are CEQA reviews. As discussed previously, CEQA is California's landmark environmental law,

which typically requires land use regulators, like municipalities, to study the environmental impacts for housing projects. Some new developments are exempt from CEQA entirely if the municipality deems the project to be ministerial in nature, meaning approval of the project requires little subjective judgment from public officials other than determining compliance with the applicable planning and building codes. The more complex cases often require a labor-intensive analysis called an Environmental Impact Report (EIR), but the government body conducting the CEQA review has broad discretion to require a less stringent level of review, such as a Negative Declaration or Mitigated Nega-

Home Building Occuring in Fewer Neighborhoods

Share of Census Tracts That Built Five or More Homes Per Year



tive Declaration. Researcher Moira O'Neill and her collaborators conducted a case study of the Greater Los Angeles region, revealing widespread delays associated with the entitlements process; the median multifamily housing development in the City of Santa Monica took over three years to receive construction permits. Those delays were the most intense when the highest level of CEQA review was needed.

In discussing the burden of CEQA review and other approval processes on housing production, O'Neill et al call for process reforms to shorten entitlements timelines and boost entitlement rates, state intervention to limit discretionary review by municipalities, and zoning for greater density. However, they note that the strong "local NIMBY (Not In My Backyard) opposition is a primary constraint to unleashing more supply" in many localities.²²

It is clear that the current regime of city-led land use regulation has failed to provide housing that is affordable in part because municipalities have used their entitlement authority to suppress new production.

In a report discussing a housing shortage, the Legislative Analyst's Office (LAO) concurs that "perhaps the most significant" factor in local governments' failure to zone for new housing is community reluctance to carry out the process "in a way that truly facilitates home building."²³ Taken together

with the overwhelming evidence of a shortage, it is clear that the current regime of city-led land use regulation has failed to provide housing that is affordable in part because municipalities have used their entitlement authority to suppress new production.

Yet, in spite of ample evidence that cities have used their authority to maintain housing market conditions consistent with a shortage, the Surplus Land Act actually further enshrines the relevance of cities in land use regulation.

Table 1: Mean Approval Time (Months) by CEQA Review Type²¹

	Los Angeles	Santa Monica	Long Beach	Pasadena
All Exemptions	10	39	8	15
Negative Declarations (ND)	5	--	--	--
Mitigated Negative Declarations (MND)	13	--	17	16
Environmental Impact Reports	43	77	23	28

THE OPPORTUNITY

In January 2019, Governor Gavin Newsom issued Executive Order N-06-19 directing the Department of General Services (DGS) to inventory land holdings across all state agencies and create a database of their excess properties. DGS provides a large number of services to other agencies in the government and houses much of the state government's real estate management services. The executive order further instructed the Department of Housing and Community Development (HCD) and the Housing Finance Agency (HFA) to assist in screening the excess state lands to identify priority sites for affordable housing development.²⁴ It should be noted that the database pertains only to property owned directly by the state, and not to property owned by subdivisions of the state such as counties, districts, and cities (local governments and subdivisions of the state maintain a separate and analogous database under the 2019 amendments to the Surplus Land Act). In contrast to the Surplus Land Act process, which imposes a mandate on thousands of local governments, the Newsom administration's order is streamlined into one state agency. In light of the opportunity for development of housing on underutilized government land, this analysis compares the status quo to two policy alternatives that shift land use authority away from traditional municipalities—and toward an alphabet soup of other governments. The shift in authority is intended to give more weight to a coordinated view

of land use needs than we have witnessed from the more localized status quo.

POLICY ALTERNATIVES MOVING FORWARD

The Unitary Model

The unitary model calls for the state to exercise its maximal land use authority over surplus local government lands, circumventing the municipal entitlements process where surplus properties are concerned. The state already has sovereignty over agency land, as that land is considered to be held in trust by the agencies on behalf of the state government. Importantly, the disposition process in the Surplus Land Act is incompatible with this model, as that process inevitably results in sale of the land to private developers. Governor Newsom's executive order N-06-2019 is instructive: in carrying out the governor's directive to pursue affordable housing development on state land, DGS plans to preserve the state's inherent land use authority by retaining title to the parcels in question. Instead of buying the underutilized public land from government agencies, private and nonprofit developers would ground-lease the land from the state and deliver affordable housing under a public-private partnership.²⁵ However, the governor's order only affects the state bureaucracy under his direct administrative control, which leaves thousands of local government parcels under the Surplus Land Act process instead of the DGS process. This option thus contemplates having the Legislature amend

DGS staff have deeper expertise in developing land and would have greater capacity to serve as an effective lead agency for the Unitary Model.

existing statute to transfer surplus local government land to the state, rather than channeling these properties into the disposition process.

The BART Model

In his final months as governor, Jerry Brown signed AB 2923 into law which instructed Bay Area Rapid Transit (BART), a special district providing mass transit services, to set transit-oriented development (TOD) zoning standards for BART-owned properties within ½ mile of its stations. A municipality with a BART station inside its city boundaries remains the primary regulator for housing developments on BART-owned land; however, the municipality must adopt the zoning guidelines recommended by BART on matters such as density limits and height limits. Finally, AB 2923 allows BART to exercise the option to act as the lead agency for the purposes of CEQA-mandated environmental impact evaluations.²⁶ Normally, cities take the lead in drafting EIR on proposed developments and, through their influence over the environmental findings, exert wide control over the project's cost and approval timelines.²⁷ This policy option contemplates having the Legislature adopt a package of new statutes granting transit agencies, school districts and other political subdivisions of the state the authority to set zoning guidelines on land that they own.

There are 1,037 school districts²⁸ and about 2,500 special districts²⁹ in the state. The latter includes all manner of local governments ranging from utility to transit districts. Some of the largest transit agencies in the state by ridership are special districts, including BART, AC Transit,³⁰ and the Los Angeles Metro.³¹ Because the afore-

mentioned local governments are all independent from municipalities, this policy alternative would result in the augmentation of these districts' land use authority. As a final clarification, many transit agencies are housed within municipalities, which is a major contrast from BART's organization structure. San Francisco Muni, Oakland's Department of Transportation, and Los Angeles's Department of Transportation are municipal agencies. Transit agencies that operate as departments of a city government would not be affected by this policy option.

Evaluating Feasibility

Political feasibility is a challenge for both the Unitary and BART Models, as both policy options require acts of the Legislature. The Unitary Model contemplates an amendment to existing statute to divert surplus local government lands to the state rather than the current disposition process. This change is necessary if the state is to maximize its control over the development process as the state's sovereignty over land is at its crest on parcels that are owned by the state.³² The disposition, or sale, of government land to a private developer would undermine this option because it would not preserve the state's ability to determine the appropriate use of land that it owns. As such, this policy option is contingent upon legislative action. The BART Model similarly involves amending state law to grant local governments such as school and transit districts a greater role in promoting housing development on their land. Due to the lack of centralized record-keeping on surplus lands, it is unclear if there is enough land to merit further action by legislators, although recent legislative action will require better data collection going forward.

Both the Unitary and BART Models can learn from the failure of Senate Bill 50 (SB 50) earlier this year. Compared to the changes contemplated in this article, SB 50 would have intervened more generally to standardize housing production rules at the state rather than the local level. However, the changes proposed in this paper would move the state in the same direction as SB 50: toward statewide goals and more uniform land use processes. Thus, it is instructive to consider that the successful opposition to SB 50 came from seemingly disparate coalitions. The first group might broadly be thought of as homeowners and their neighborhood associations, which recoiled at the prospect of losing local control to the state. Some of the bill's most fervent opposition in the legislature included members representing cities whose names are synonymous with affluence: Atherton, Menlo Park, Calabasas, Pasadena. The second group of opponents consisted of tenants' rights advocates and anti-displacement activists concerned that new developments might fuel a new wave of gentrification in sensitive communities.³³ Being much more limited in scope than SB 50, this article's proposals are likely to draw less opposition from both of the groups that defeated that bill. Homeowners concerned about the suburban character of their neighborhoods might be placated to learn that my proposals affect thousands of plots of land, rather than millions. And since the Surplus Land Act is primarily a vehicle for developing non-market rate housing, anti-displacement activists are likely to support expanding it.

Intertwined with the question of political feasibility is the likelihood of legal and constitutional challenges to any law that attempts to shift land use authority away

from municipalities. However, legal feasibility is not a fatal issue for either the Unitary or BART Model. The state has expansive powers over the land use authority of localities, as we already saw in the court ruling on the Surplus Land Act challenge. Legal scholars have observed that municipal land use authority arises from the powers delegated to them by their state governments³⁴ and California's Supreme Court has upheld the doctrine that "when the state engages in such sovereign activities as the construction and maintenance of its buildings [...] it is not subject to local regulations unless the Constitution says it is or the Legislature has consented to such regulation." This principle has been interpreted to mean that school districts organized under state laws to act as agents of the state are exempt from building regulations promulgated by a non-chartered city.³⁵

Implementation presents another set of feasibility threats to the policy alternatives. In my interviews with officials in government, it became clear that none of the housing agencies are well-equipped to manage the real estate development process for the entire state. California Housing Finance Agency (CalHFA) and HCD are primarily state organs for managing the allocation of funds for affordable housing.³⁶ The officials noted instead that DGS staff have deeper expertise in developing land and would have greater capacity to serve as an effective lead agency for the Unitary Model. DGS is already executing the Newsom Administration's initiative to develop housing on agency-owned land, in a way that closely resembles the Unitary Model. Having inventoried the roughly 44,000 plots of land owned by the state's agencies and whittled that down to about 100 excess properties that are suitable for housing, DGS has even

started to strategically engage private and nonprofit developers to solicit Requests for Proposals (RFPs) to build on some of those parcels.³⁷ I also learned from interviews with DGS staff that, rather than sell the excess land to affordable housing developers or donate it to them, DGS plans to retain title to those properties while ground-leasing to the developer.³⁸ So there is already a similar process in place, albeit smaller and concerning only property directly owned by the state. In terms of agency skill and experience, it seems most feasible to delegate localities' surplus lands to DGS.

Implementation feasibility is more challenging under the BART Model. Although BART itself has deep experience with transit-oriented development, expertise in developing affordable housing is a highly specialized skillset that many other localities might not have within their existing staffing. If the BART Model were to be adopted, many of the local governments that would be called upon to develop housing are school districts, water and power districts, or even healthcare districts. In other words, these are specialized governments with no housing mission and therefore very little experience with developing affordable housing from the ground up. Even though some school districts have built workforce housing on their surplus land, the scalability of this model across the huge diversity of local governments in California is dubious.

CONCLUSION

In the state's move to catalog its local government surplus lands presents an opportunity to redouble its efforts on building affordable housing. In the coming years, we will have a much clearer idea of how much surplus land is being held by local governments, in much the same way that we now have a line of sight into the state government's excess lands.

Certainly, the prevailing system of local preeminence in land use regulation has proved acquiescent at best. Municipal leaders continue to enact exclusionary zoning policies that segregate our cities while exacerbating housing unaffordability. Unlike the BART Model, which may not be feasible for local governments with less experience in developing affordable housing, the Unitary Model option has a clear roadmap to successful implementation.

This paper recommends the Unitary Model: a regime of land use regulation that centralizes authority away from traditional municipalities and toward the state government.

This paper recommends the Unitary Model: a regime of land use regulation that centralizes authority away from traditional municipalities and toward the state government. The way forward in managing the state's surplus government lands is not to sell such parcels, but to transfer the title of these parcels to California's Department of General Services (DGS). DGS has deep staff experience in developing land, and in fact, has arrived at a similar strategy to the one I am proposing as it carries out the Newsom Administration's "excess land" initiative. DGS plans to retain title to excess state land, ground-leasing it

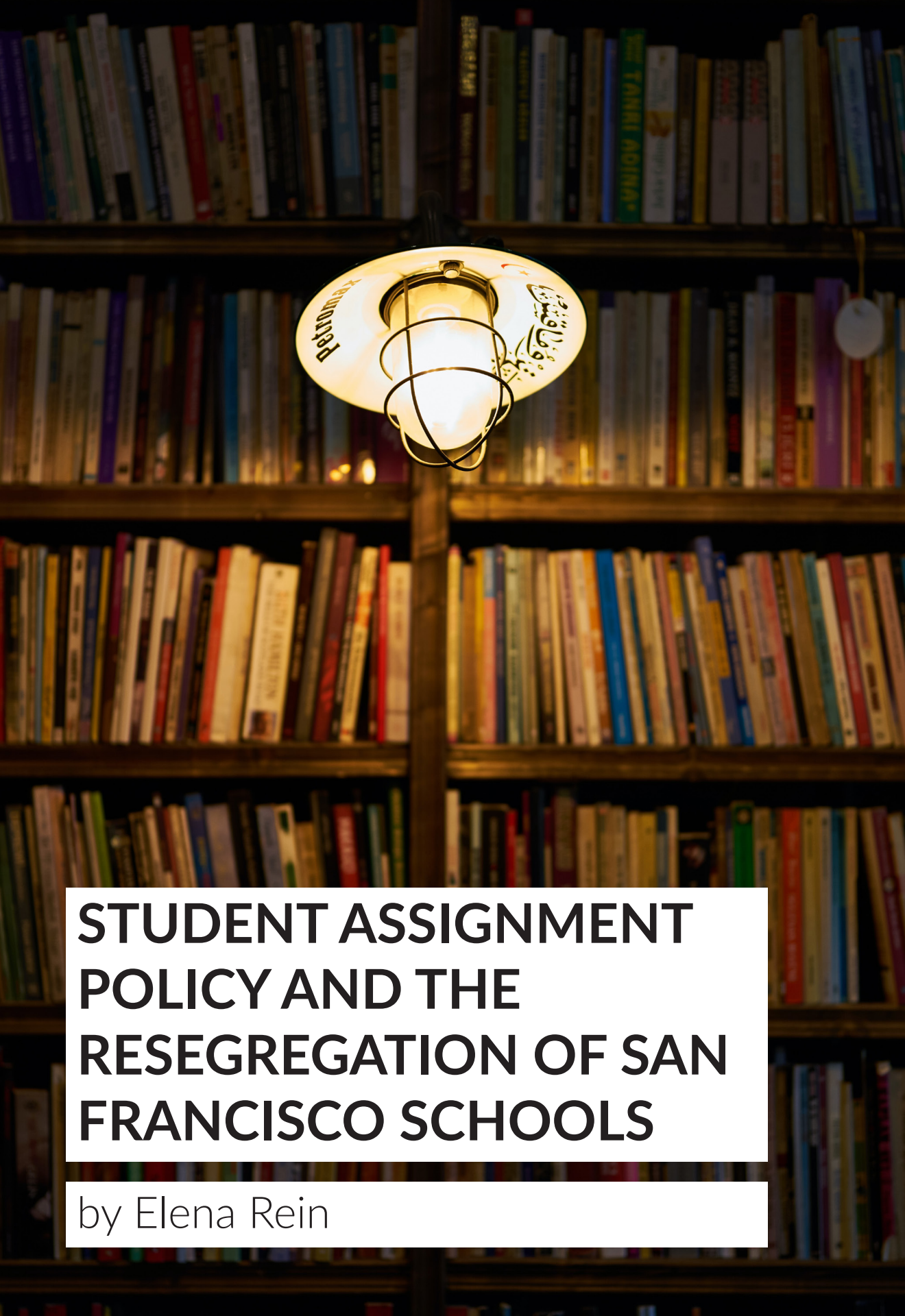
to developers, and use the state's inherent sovereignty over land it owns to circumvent municipal processes. By diverting surplus local government land to the New-som administration's excess land initiative, a reimagined Surplus Land Act can better streamline and expedite the development of affordable housing.

More work remains to be done to analyze intersections of affordable housing and finance. One of the most important challenges to developing more affordable housing is the lack of public funds to subsidize these projects. Most affordable housing in California and across the US is still financed by LIHTC, a program that is heavily oversubscribed. In thinking about how to reduce the burden of regulation on home builders, this analysis is aware that California law currently requires that surplus lands be set aside for affordable housing, and this analysis did not propose changes to this mandate. However, a common thread among all experts interviewed for this piece was the concern that governments have limited ability to issue debt, and that federal subsidies for affordable housing in particular is tightly constrained. At the same time, state and local governments in California have limited ability to raise revenues through traditional sources like property taxes. They are therefore unlikely to substantially increase their public subsidies for affordable housing. Additional analysis needs to be conducted to understand whether the affordable housing mandate should be relaxed, or if another source of financing can be obtained to fund it.

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STUDENT ASSIGNMENT POLICY AND THE RESEGREGATION OF SAN FRANCISCO SCHOOLS

by Elena Rein

STUDENT ASSIGNMENT POLICY AND THE RESEGREGATION OF SAN FRANCISCO SCHOOLS

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Edited by: Lillianne Nienstadt & Maria Valle

This paper chronicles San Francisco Unified School District (SFUSD) student assignment policy changes since the 1980s and provides original data analysis of shifts in school demographics since 1993. These changes are situated within city-wide population and economic fluctuations and highlight how policies intended to distribute resources equitably may have exacerbated existing inequities. Principally, data suggests that racial segregation intensified across the time period, representing a backslide in the district's attempt to desegregate schools. Without using the key lever of race, the district has been unable to counteract entrenched racial isolation, instead relying on parent choice to assign students to schools across the city. Today, thousands of SFUSD students attend racially isolated schools, placing students of color at a distinct disadvantage in academics and beyond. To begin ameliorating these inequities, SFUSD should reinstitute the use of race in student assignment policies by borrowing a tried and tested strategy from a neighboring district.

INTRODUCTION

As a major cultural center in California, San Francisco serves as an important backdrop for studying race and education. Specifically, San Francisco has recently undergone significant changes in both racial/ethnic composition and practices by which its lone public school district distributes students across the city. The district highlights desegregation as an explicit goal of its assignment policies, but legal challenges during the studied period dramatically changed the extent to which SFUSD could purposefully desegregate. Ensuing policies offered varied attempts to achieve integration, ultimately failing to improve upon isolation levels of the early 1980s.

SFUSD's goal of decreasing racial isolation aligns with consistent research on the negative impacts of segregated schooling. On the academic side, schools in highly segregated Black² or Latino³ neighborhoods score far worse on math and reading tests than schools in low segregation neighborhoods (16 percent lower for 4th-grade math and 18 percent for reading). The difference is even starker when comparing schools in highly segregated Black or Latino neighborhoods with those in highly segregated White⁴ neighborhoods (39 percent gap in 4th-grade math and 38 percent gap for reading).⁵ Beyond standardized tests, diverse classrooms are also better learning environments for skills such as relationship building, creativity, deep thinking, and problem-solving.⁶ Once outside of school

walls, students from integrated schools are also more likely to have positive life outcomes as measured by annual earnings and poverty levels.^{7,8} On the other hand, students who attend segregated schools are more likely to live adult lives in segregated neighborhoods and send their kids to segregated schools,⁹ furthering a cycle of intergenerational segregation.

Using these negative impacts as the main driver for my research, I begin by detailing SFUSD policy changes and corresponding fluctuations in city and school demographics since the 1980s — a pivotal decade in SFUSD’s fight against segregated schooling. Following this framing, I introduce analysis based on school-level enrollment data to document shifts in the racial/ethnic composition of schools aligned with changes in SFUSD policy. I conclude by situating my findings within existing ex-

ternal pressures and provide a framework for legal use of race in student assignment policies.

THE SAN FRANCISCO CONTEXT

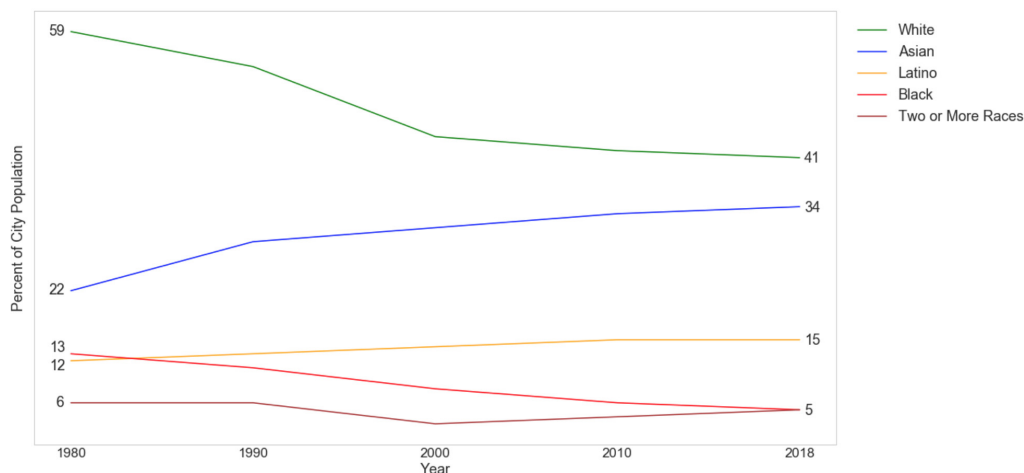
San Francisco’s population has significantly shifted over the past four decades, and today no racial/ethnic group represents a 50 percent majority. Notably, from 1980 to 2018, Black and White populations steadily declined while Asian¹⁰ and Latino populations rose (Figure 1). This overall population change mirrors that of

Like many American cities, San Francisco is racially segregated. This separates access to a wide range of goods and services such that some communities perennially benefit from public resources, including schools, more than others.

the city’s child population. Most dramatically, there was a 65 percent reduction in the number of Black children between 1980 and 2010.¹¹

Like many American cities, San Francisco is racially segregated. Generally, residential racial segregation separates access to

Figure 1: San Francisco’s Changing Demographics¹²



a wide range of goods and services such that some communities perennially benefit from public resources, including schools, more than others.¹³ In San Francisco, exclusionary housing policies and high housing costs have pushed the city's Black population primarily into the Southeast of the city. White families are concentrated in Northern and Central San Francisco, while Asian families are more likely to live in the Southwest part of the city.

However, the empirical degree to which racial residential segregation is changing in San Francisco is more complex. Data from Menendian and Gambhir using the divergence index (which measures the degree of difference between smaller and larger areas such as neighborhoods and cities) suggests that San Francisco was most segregated in 1980 with a steady decrease through 2010.¹⁴ Yet segregation has intensified for some subpopulations. San Francisco saw a net decrease of 3,000 low-income Black households between 2000 and 2015, representing a 17 percent drop. Those remaining are now even more likely to live in segregated neighborhoods (65 percent in 2015 up from 41 percent in 2000).¹⁵ Low-income Asian and Latino populations increased citywide over the same period but fell in the historically Asian and Latino neighborhoods of Chinatown, SoMa, and the Mission.¹⁶

Rent increases help explain San Francisco's changing demographics. The Urban Displacement Project found that between 2000 and 2015, median rents rose by at least 30 percent in one-fifth of the city, with especially substantial increases in historically low-income communities.¹⁷ These jumps in housing costs particularly hurt communities of color. In the Bay Area as a whole, a 30 percent increase in median rent was

associated with a 21 percent decrease in the area's population of low-income residents of color. No such significant relationship was discovered for low-income White residents, suggesting that race/ethnicity may be an especially important risk factor for displacement with rising housing costs.¹⁸

STUDENT ASSIGNMENT POLICIES

San Francisco Unified School District is the only traditional public school district serving students within the City & County of San Francisco. Over the past few decades, the district has experienced population fluctuations paired with dramatic changes in student assignment policies. Broadly, assignment policies heavily influence where students attend school and what resources they can or cannot access. Under a traditional neighborhood schools model, where children attend schools near their homes, living in lower-income neighborhoods often means attending poorer-resourced schools. This link between residential patterns and educational opportunities is broken with some assignment models, under which students can enroll in schools outside their neighborhood.

SFUSD underwent three major changes in student assignment policy over the studied period. These adjustments, and subsequent changes to racial segregation patterns, are detailed here and illustrate the powerful influence school policy has on students' lives.

Before 1983

In the 1960s, SFUSD was large and diverse. The district boasted the highest percentage of both Black and Chinese students in California (26 percent and 14 percent, respectively), and the second-lowest proportion

of White students (44 percent). Despite this overall diversity, the district was heavily segregated, with neighborhood schools predominantly serving students of a single racial group.¹⁹ In 1970, the NAACP filed the *Johnson vs. SFUSD* lawsuit fighting this segregation, resulting in a new requirement that schools be no more than 15 percentage points away from the racial breakdown of the city as a whole.²⁰ This ruling included bus transportation, which momentarily diversified schools, until, as in cities across the country, White families abandoned the district. This white flight led to Black students constituting SFUSD's largest racial group (30 percent in 1973). When the bussing program ended only a few years later, SFUSD was still racially segregated.²¹ The NAACP again filed suit asserting that the district was not only illegally segregated,²² but that minority students were systematically relegated to low-quality schools.²³ This lawsuit aimed to explicitly include racial diversity in school assignment priorities and resulted in a significant change to SFUSD enrollment policy.

1983 Consent Decree

In 1983 the NAACP settled its second school desegregation lawsuit with SFUSD in just over a decade. The ensuing consent decree dramatically reworked how students were assigned to schools with the intent to both racially balance schools and improve academic achievement.^{24,25} To do so, SFUSD would receive about \$30 million in annual funding from the state (about six percent

of the district's operating budget).²⁶ Per the consent decree, SFUSD instituted racial quotas based on nine then-defined racial groups: "Spanish-surnamed, Other White, Black, Chinese, Japanese, Korean, Filipino, American Indian, and Other Non-White".²⁷ To comply, every school in San Francisco was required to have at least four of these groups represented in the student body, and no one racial group could sur-

pass 45 percent of any school's total enrollment.^{28,29}

In addition to the racial caps, the consent decree included funding to increase opportunities for academic excellence with

The NAACP filed suit asserting that the district was not only illegally segregated, but that minority students were systematically relegated to low-quality schools.

a particular focus on Black and Latino students.³⁰ Phase one of the implementation targeted schools in the Bayview/Hunter's Point neighborhood. In an effort to truly transform schools that were failing to meet students' needs, all administrators were replaced, and all teachers required to reapply for their positions, resulting in a 70–80 percent staffing change at affected "consent decree" schools. With these changes came rigorous investment in teacher and leader capacity building. This influx of new resources positively impacted schools: professional development and university partnerships brought cutting edge teacher practice, and schools saw marked improvements in student academic achievement.^{31,32}

However, other communities felt that the flow of funding to one corner of the city created new inequities. In the second phase of the consent decree roll out, the money was distributed to schools in other neighborhoods. Without any additional fund-

ing, these phase two schools received fewer resources and did not implement the same, broad-strokes overhaul strategies as the phase one schools. As a result, they failed to experience the same levels of positive change.³³ Nevertheless, the consent decree proved a success towards the goal of integration. In the 1992–93 school year, only one of 102 SFUSD schools were “racially identifiable” or not in compliance with the 45 percent racial cap.³⁴ By 1996, “SFUSD boasted one of the most racially integrated school systems in the country.”³⁵

Ho Lawsuit

Though the consent decree aimed to reduce racial isolation and reverse decades of under-investment in minority student education, not all communities felt it treated them fairly. In 1994, three Chinese families filed what became the Ho lawsuit, alleging racial discrimination in violation of the Equal Protection Clause of the Fourteenth Amendment.³⁶ Two students were rejected from their top choice elementary school because of the 45 percent cap on Chinese students. The third student was rejected from Lowell High School (the district’s highest-ranking high school) because his score fell below the cut-off for Chinese students while surpassing that of other racial groups.^{37,38} The lawsuit claimed reverse affirmative action — that while the 1983 consent decree was designed to support minority students, it actually most benefited White students. This claim stemmed in part from the relatively low Lowell acceptance rate of Chinese students (35 percent) as compared to White students (65 percent).³⁹

In response to the Ho lawsuit, a judge determined in 1999 that the use of race in

student assignment was unconstitutional.⁴⁰ Two years later, another settlement agreement spelled the eventual dismantling of the rest of the consent decree by 2002 when “all reasonably practical measures to remedy any vestiges of segregation” would have been taken.⁴¹

Diversity Index (2001 – 2011)

After the Ho case ruling, SFUSD created a new enrollment process that did not consider race. Left with very few tools with which to achieve its goal of desegregation, the district implemented the “Excellence for All” policy in 2001.⁴² This policy had the explicit goals of giving parents choice in schools, ensuring equitable access to education, and diversifying schools.⁴³ Prohibited from using race in its efforts to diversify, the district instituted a proxy diversity index, which used socioeconomic status, academic achievement, English Language Learner status, mother’s educational background, academic performance at prior schools, home language, and geographic area.⁴⁴

Lottery System (2011 – Present)

The diversity index aimed to promote diversity but did not, according to SFUSD board policy documents, meet “SFUSD’s longtime desegregation goals of reducing racial isolation and improving education opportunities and outcomes for all students”.⁴⁵ The district set about creating another enrollment plan but acknowledged the inherent limitations of any parent choice model to combat segregation: “For many schools, the applicant pools are not diverse. Since the diversity lottery only assigns students from the applicant pools,

it has limited opportunity to reduce racial isolation.”⁴⁶

This new lottery was implemented in 2011 and continues to dictate student assignments in the district today. Under the plan, parents rank schools they are interested in, and students are assigned based on these choices. In the case that more parents rank a school than there are open seats, race-neutral tiebreakers determine enrollment.⁴⁷⁻⁴⁸

DE- AND RE-SEGREGATION IN SFUSD

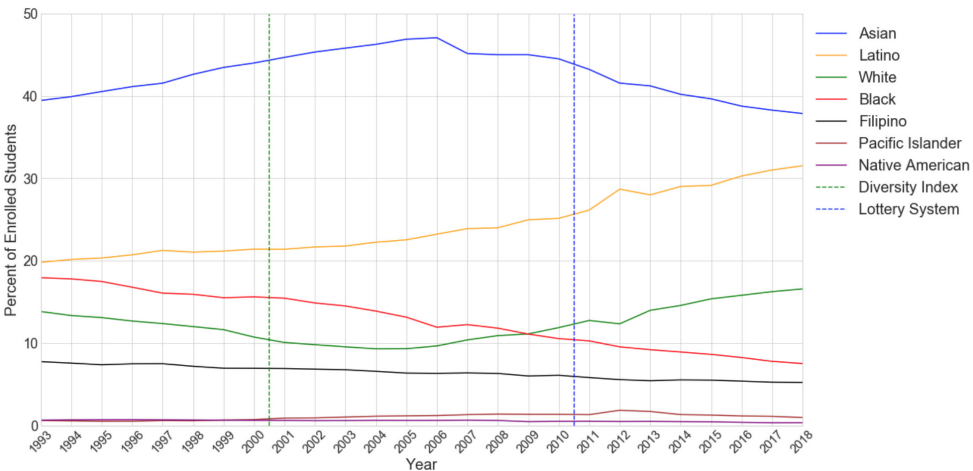
To analyze enrollment over time, I used school-level enrollment data from the 1993–94 to 2018–19 school years,^{49,50} removing data as necessary to ensure completeness and consistency.⁵¹ Importantly, charter schools were removed from the data set to focus the analysis on schools whose enrollment procedures are set and regulated by SFUSD.^{52,53} With a clean data set, I examined changes in racial/ethnic composition of SFUSD for the city as a whole, by zip code, and by school. The analysis focuses on three distinct time spans bracketed by changes in student assignment policies

during this period: 1993 to 2000 (consent decree with racial caps), 2001 to 2010 (diversity index), and 2011 to 2018 (lottery system).

Between 1993 and 2018, SFUSD enrollment (including charter schools) remained stable from 61,631 to 60,390, representing 76 percent of school-aged children in both time periods.^{54,55,56,57} However, the racial/ethnic breakdown of the district changed significantly over time. As shown in Figure 2, there was a consistent decline in the proportion of Black students and a consistent increase in the proportion of Latino students. Asian students have long made up the greatest percentage of SFUSD enrollment, peaking in 2006. White students demonstrate the opposite trend with the lowest percentage in 2005 and a steady increase through the 2018–19 school year (Figure 2).

Using zip code-level data, I then analyzed enrollment trends at the neighborhood level. Bayview/Hunter’s Point (zip code 94124) was the epicenter of significant changes after the 1983 consent decree, with

Figure 2: City-Wide SFUSD Enrollment by Year and Racial/Ethnic Group



funding for both massive school overhauls and bussing to move students into and out of the neighborhood. The Mission (zip code 94110) has long served as a case study of gentrification with recent reinvestment and the displacement of existing populations by higher-income, White residents.⁵⁸

Bayview/Hunter’s Point

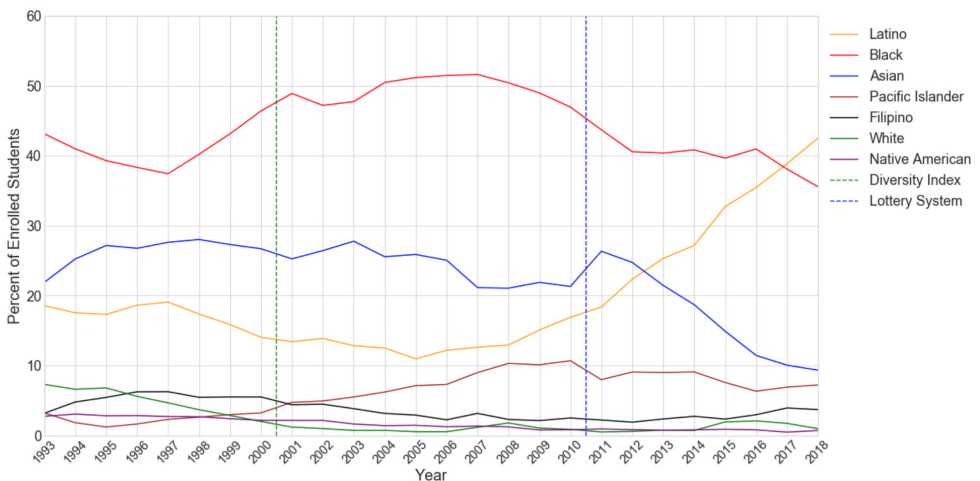
Figure 3 shows aggregate enrollment in schools in the 94124 zip code from 1993 to 2018 by race/ethnicity. While Black students did not top one-fifth of city-wide enrollment in any year, they made up the majority of 94124 enrollment in all but the last two years of analysis. This is perhaps unsurprising given that, though school choice can in theory move students around the city, transportation restrictions (further discussed below) limit the feasible school options available to Bayview/Hunter’s Point students.⁵⁹

In the mid-1990s, there was a general trend toward more racial integration in 94124 schools as the Black student majority fell to below consent decree-mandated levels.

This was during the height of the decree implementation, which had funneled money into Bayview/Hunter’s Point schools. A former SFUSD administrator asserted that this second mandate of the consent decree (to increase the quality of schools in low-performing areas), was itself a means towards the goal of desegregation. The district believed that by creating high-quality schools throughout the city, including in Bayview/Hunter’s Point, some families would self-integrate.⁶⁰

However, as the consent decree gave way after the Ho lawsuit, 94124 clearly resegregated. The proportion of Black students in 94124 schools reached over 50 percent between 2004 and 2008, missing the consent decree target of a maximum 45 percent.⁶¹ After implementation of the lottery system in 2011, the percentage of both Black and Asian students in the area decreased with a corresponding rise in Latino student enrollment.

Figure 3: 94124 (Bayview/Hunter’s Point) Enrollment by Year and Racial/Ethnic Group



The Mission

The Mission has long been ground zero for conversations about gentrification. A mostly working-class Irish, then Latino neighborhood, the Mission began to change after 1973 when the Bay Area Rapid Transit (BART) system opened two stations in the neighborhood. With an easy commute downtown via BART came an influx of white-collar, mostly White workers. The 1990s dot-com bubble then provided context for a particularly stark transformation. Tech workers were drawn to the Mission because of BART and access to freeways connecting to Silicon Valley, where communities were simultaneously restricting housing development. These factors culminated in a Mission rental market boom, resulting in a tripling of evictions between 1993 and 2000.⁶² During the second wave tech boom (2000–2015), even more community members were displaced, and the percentage of Latino households in San Francisco’s Latino cultural center fell from 60 percent to 48 percent.⁶³

Though gentrification worked to reduce the Mission’s resident Latino population, the neighborhood’s schools saw a reverse trend with schools clearly resegregating.⁶⁴ In the mid-1990s, 94110 schools (as a whole) enrolled no racial/ethnic group at over 45 percent. Since race was removed from student assignment consideration in the late-1990s, there has been a consistent and substantial increase in the percentage of Latino students and subsequent fall in all other major racial/ethnic groups except White (Figure 4).

The trend towards resegregation present in both the Bayview/Hunter’s Point (between 2001 and 2007) and the Mission highlights

a larger change for schools across the city. According to the SFUSD definition of racial isolation (schools with more than 60 percent of a single racial/ethnic group), the district has become far more racially isolated since the 1990s. Figure 5 plots the percentage of SFUSD non-charter schools with over 60 percent enrollment of one racial/ethnic group in each year from 1993 through 2018.^{65,66}

In the mid-1990s, SFUSD was relatively integrated; between 1993 and 1999, only 15–23 percent of schools were racially isolated. After 1999, when the presiding judge issued guidance that the Ho lawsuit was likely to succeed in making race-based assignments unconstitutional,⁶⁷ the proportion of segregated SFUSD schools grew significantly. The data demonstrates a peak in racial isolation in the 2006–07 school year during which 46 percent of schools were racially isolated, with a slight decline after implementation of the lottery system.

Though the current trend may indicate a decrease in the number of racially isolated schools city-wide, White students (along with their financial and social capital) have been increasingly concentrated in a few San Francisco schools.⁶⁸ Between 1994 and 2007, no schools had more than 50 percent White students. Since then, there has been a consistent increase in these White-majority schools, up to nine (out of 109) in 2018–19. On the other extreme, the mid-2000s saw a peak in schools with under two percent White students — so-called “apartheid schools”. Between 2000 and 2007, there were consistently 20 or more schools under that threshold with a peak in 2003 when over one-quarter of schools fit this criterion.

Figure 4: 94110 (Mission) Enrollment by Year and Racial/Ethnic Group

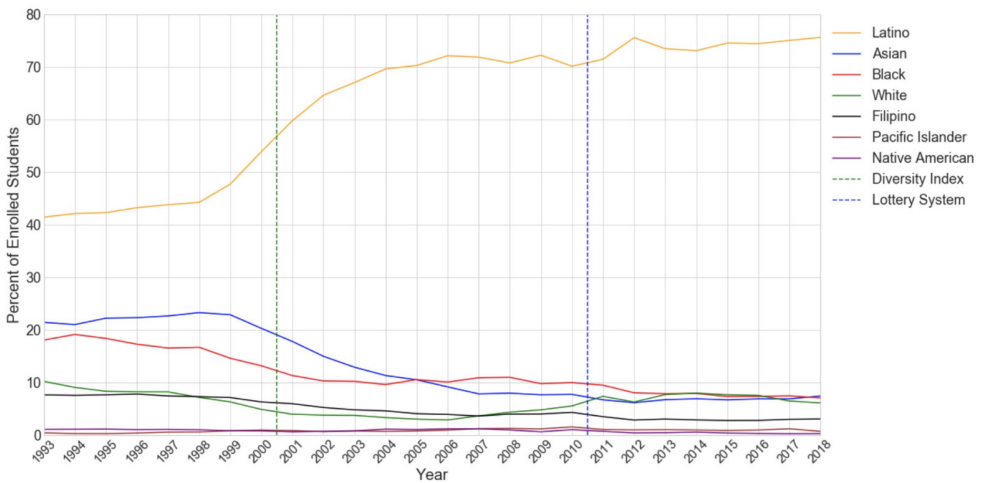
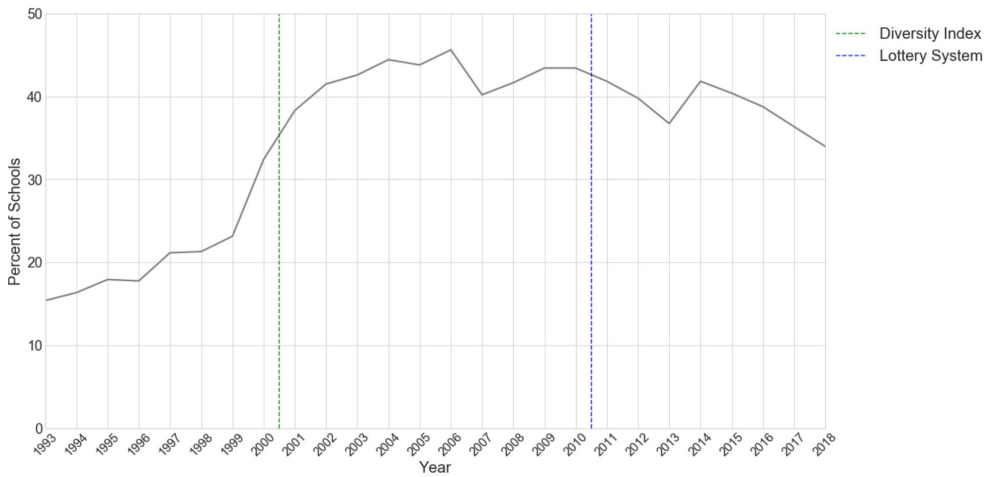


Figure 5: SFUSD Racially Isolated Schools by Year



SHAPING SAN FRANCISCO'S SCHOOLS

Together, these indicators signal a failure of race-neutral policies to promote diversity in San Francisco schools. In fact, the “rapid increases in segregation since [the] desegregation plan was terminated”⁶⁹ suggests that recent assignment policies have actually facilitated a regression towards racial isolation. This is not lost on SFUSD officials; Stevon Cook, commissioner on the district’s board of education, said just

last year that the “current [lottery] system is broken... We’ve inadvertently made the schools more segregated”.⁷⁰ Trends toward resegregation are perhaps unsurprising given the Ho lawsuit, as the school district lost the ability to consider race in assignment policies. District leadership now acknowledges that it may not be possible to reduce racial isolation through an assignment process that prizes parent choice, as true desegregation would require mandating students to attend schools they had not requested.⁷¹

In fact, parent choice may be the primary reason why San Francisco schools are resegregating. Navigating the choice system requires time, information, social networks, and resources that lower-income and minority families are less likely to have. For example, school tours are most often scheduled during prime working hours and information about school programs is shared among informal networks of highly educated San Francisco parents.^{72-73,74} These informational imbalances may directly impact how parent choices are collected and used by SFUSD's system: 21 percent of Black students and 15 percent of Latino students submit their choice forms late or never (compared to just four percent of White and three percent of Chinese American students). These students' choices are processed last and they are therefore often not competitive for the most highly ranked schools. Some evidence, however, suggests that the lottery system may be somewhat equity-promoting, as a higher percentage of students of color get into their first-choice school for kindergarten.⁷⁵

Moreover, higher resourced families can simply opt out of SFUSD altogether if the choice system does not result in the school they want. Private schools have long played a key role in the make-up of SFUSD, enrolling roughly 25 percent of San Francisco's students.⁷⁶ This places San Francisco third highest in the nation's cities in terms of private school enrollment⁷⁷, and parents often cite the lottery system as a major rea-

son for choosing private school.⁷⁸ With so many higher resourced students enrolling in private schools, SFUSD enrollment perhaps unsurprisingly does not mirror the city's child population; whereas one-third of San Francisco's student-aged population is White, only 12 percent of SFUSD is White.⁷⁹

Finally, structural changes may also contribute to the observed increase in racial isolation. SFUSD's transportation funding has been cut back at least three times since the turn of the century: in 2002 after con-

"Rapid increases in segregation since [the] desegregation plan was terminated" suggests that recent assignment policies have actually facilitated a regression towards racial isolation.

sent decree money was canceled, in 2010 after the beginning of the Great Recession,⁸⁰ and again between 2011 and 2013. This last reduction slashed almost half of the district's bus fleet (from 44 to 25 busses) resulting in 20 schools losing all bus service.⁸¹ Today, only

roughly six percent of SFUSD students ride the bus to school.^{82,83} Other enrolled students must either make their own way to school (sometimes requiring two or even three MUNI line transfers⁸⁴) or select schools near their homes, tying school enrollment to residential area and intensifying school segregation.

Perhaps reflecting on the relative failure of current policy to reduce racial isolation, SFUSD is designing yet another student assignment process with the explicit goal of school integration.⁸⁵ This redesign presents a crucial opportunity for the district to examine its two-decades long trend towards racial isolation and to build a school assignment system truly poised to correct it.

CONCLUSION

Blending a historical perspective of student assignment policies in SFUSD with novel data analysis of racial segregation and isolation, this paper presents a stark picture of the deleterious effects of removing race from student assignment consideration. The impacts of this trend towards resegregation should not be underemphasized: all students (White and of color) fare better when learning in diverse environments.⁸⁶ SFUSD emphasizes a sustained commitment to this aim, but must creatively work within existing restrictive legal precedent to turn back the trend towards racial isolation.

Beyond the Ho case, the Parents Involved (PICS) ruling in 2007 constructed another major hurdle to adopting assignment policies designed to limit racial segregation. Though a majority of supreme court justices agreed that diversity in schools is in the state's best interest, the PICS decision eliminated districts' ability to use student race even in voluntary desegregation plans.⁸⁷ Just as SFUSD had experienced in the mid-1990s, districts across the country thereby lost perhaps the most impactful lever to combat racial segregation.

However, a district just across the bay provides an important example of how San Francisco could remove its racial blinders and legally use race to desegregate schools. In 2004, Berkeley Unified School District designed a student assignment plan that would withstand the forthcoming PICS ruling and operate within the city's preferred framework of parent choice. The city sliced its three major attendance zones into 445 "micro-neighborhoods" or "planning areas", each scored based on race,

household income, and parent educational attainment. The "controlled choice" plan (still in use) allows parents to rank their preferred elementary schools, which are granted as long as the resulting enrollment meets the district's desegregation goals. As such, students are not assigned to schools on the basis of their race or ethnicity (illegal after the PICS decision) but on the basis of their neighborhood's characteristics. A 2009 report, written after the plan was upheld in court, illustrates the significant successes Berkeley has enjoyed through this plan: most of Berkeley's elementary schools in that year were racially diverse⁸⁸ and, as of this year, 72 percent of families receive their first-choice school.⁸⁹

Learning from Berkeley and Obama-era federal guidance,⁹⁰ SFUSD should operationalize its commitment to desegregation by reintroducing race in its forthcoming student assignment policy. By doing so at the neighborhood level, the district could avoid serious legal challenges, retain a parent choice model, and reverse the dangerous trend towards racial isolation demonstrated in this analysis. Continuing to address the problem of racial segregation without considering race would be to ignore both reason and data, ultimately failing to properly serve all of San Francisco's students.

ENDNOTES

1. Data cleaning and visualizations by Eric Perkins
2. "Black" will be used to represent all people of African descent. When quoting language that includes other terms (e.g. "African-American"), that terminology will be maintained.
3. "Latino" will be used to represent all people of Hispanic or Latino descent. When quoting language

that includes other terms (e.g. “Hispanic”, “Spanish-surnamed”), that terminology will be maintained.

4. “White” will be used to represent all people of Caucasian/European descent, not including Latino populations.

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6. Stuart Wells, A., Fox, L., & Cordova-Cobo, D. (2016). How Racially Diverse Schools and Classrooms Can Benefit All Students. The Century Foundation. Retrieved from <https://tcf.org/content/report/how-racially-diverse-schools-and-classrooms-can-benefit-all-students/>

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www.urbandisplacement.org/sites/default/files/images/sf_final.pdf

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17. Ibid

18. Ibid

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47. Tiebreakers vary slightly depending on school level (elementary, middle, and high), but follow a similar pattern: an enrolled sibling takes first precedence, followed by enrollment in an associated lower-level school (PreK/TK attendance area for elementary enrollment and elementary feeder patterns for middle school), followed by a test-score area priority. This test-score priority is given to students that live in neighborhoods with the lowest scores on the K12 California Standards Test. Attendance zone is the last tiebreaker for elementary schools but is not included for middle and high schools.
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51. Since “two or more races” and “not reported” were added after 1993 and are reported inconsistently across years, these categories are not included in the analysis. In 2018-19, “two or more races” represented 5.7% of enrollment, and “not reported” represented 5.8% (CDE, DataQuest, 1993-2019). Schools that explicitly serve only one ethnic group (e.g. Chinese Education Center) and those that serve only pre-kindergarten were also removed.
52. *California first authorized charter schools in 1992, leading the larger movement towards parent choice models as evidenced by SFUSD student assignment policies*. San Francisco charters as a whole enroll far more Latino and Black students than do the city's traditional public schools, and school-level data suggests that charter students attend segregated schools just as their peers often do in traditional schools. Despite more flexibility in enrollment processes, 11 of the 13 San Francisco charter schools surpassed the 45% single-race threshold in the 2019-2020 school year. Though this paper focuses on non-charters, the San Francisco charter experience further

highlights the shortcomings of choice-based models to facilitate school desegregation.

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53. As a data validity check, I compared my cleaned data for the 2018-19 year to the California Department of Education data on city-wide, non-charter school enrollment:

Asian: 37.5% (cleaned data), 34.1% (CDE data)

Black: 7.5% (cleaned data), 6.6% (CDE data)

Filipino: 5.1% (cleaned data), 4.6% (CDE data)

Latino: 31.2% (cleaned data), 27.4% (CDE data)

Native American: 0.3% (cleaned data), 0.3% (CDE data)

Not reported: (not included in analysis for data consistency), 5.8% (CDE data)

Pacific Islander: 0.9% (cleaned data), 0.8% (CDE data)

Two or more races: (not included in analysis for data consistency), 5.7% (CDE data)

White: 17.3% (cleaned data), 14.7% (CDE data)

54. Population of school-aged children for the first time period is estimated using the 1990 census count.

55. California Department of Education DataQuest (1993-2019). San Francisco Unified Enrollment by Ethnicity [Data files]. Retrieved from <https://data1.cde.ca.gov/dataquest/>

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64. This reverse trend suggests that newer, non-Latino Mission residents are less likely to send children to Mission public schools. This could be because new residents have fewer children or are opting out of Mission public schools through parent choice policies or by choosing private schools.

65. Note that this analysis may slightly overestimate the percentage of racially isolated schools since two racial categories were removed from analysis ("two or more races" and "not reported"). This effectively reduces the total number of students in each school, raising the proportion of each remaining racial group. However, the trends in racial isolation would remain the same if these groups were included.

66. The data does not match the previously cited statistic that just 1 in 102 schools in 1992 was racially identifiable because that definition separated Chinese, Korean, and Japanese students. The current analysis combines these students based on available data. Therefore, schools are identified here as racially isolated if they have more than 60% Asian students.

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**A CONVERSATION WITH
RUCKER JOHNSON**

A CONVERSATION WITH RUCKER JOHNSON

Edited by: Daniel Morales Campos, Molly McGregor,
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Rucker Johnson is Chancellor's Professor of Public Policy at the Goldman School of Public Policy at the University of California, Berkeley, and a Faculty Research Associate at the National Bureau of Economic Research. Dr. Johnson's research focuses on the role of poverty and inequality in affecting life chances. His most recent book, Children of The Dream: Why School Integration Works, reveals the successful outcomes of the school integration efforts of the 1970s and 80s and argues for a renewed commitment to integration. Dr. Johnson earned his B.S. degree in Economics at Morehouse College, and his PhD. in Economics at the University of Michigan. At the Goldman School of Public Policy, Dr. Johnson teaches courses in applied quantitative methods, race, poverty, and inequality.

The transcript below has been edited lightly for clarity.

BPPJ: You've recently authored *Children of the Dream: Why School Integration Works*. What led you to write the book and what was the writing process like?

R. Johnson: My book was borne out of my research — out of my passion for the economics of education and my desire to speak to a broader audience about what I've discovered through years of research: school quality and school spending matter, but school integration is also a necessary component of a strong, effective school system that benefits all children. I also wanted to show the human side of data — to uplift the untold stories of our school-desegregation heroes.

Much of our politics is focused on budget deficits and there is not enough attention on deficits of opportunity, particularly those faced by children from low-income families and communities of color.

A lot of our policy responses to such deficits tend to be very incrementalist, wherein there is some policy amnesia about how we got to this point and what the big drivers are in which these achievement gaps are rooted. Many a time, policy makers focus on achievement gaps without paying sufficient attention to the gaps in educational opportunity that precede them.

My scholarship is focused on finding concrete answers and offering viable policy prescriptions for ensuring that today's poor

children don't become the parents of tomorrow's poor children. This requires a real interrogation of how we should distribute resources for children, beginning in their earliest years; and what are the lessons that can be gleaned from our most ambitious policy proposals. That is where my research effort was concentrated before it became a book. I was trying to produce work that could yield a cohesive set of instruments for change. And the three instruments that were identified were school integration efforts, school funding reforms, and early pre-K investments, which became the foundational aspects of the book.

I wanted to use data as a time machine to reassess what I thought were premature conclusions about school spending and integration's purported lack of efficacy. I wanted to use longitudinal data that could trace children from birth to adulthood across multiple generations with a research design that could illuminate the long-term causal effects of these three policies. In particular, school integration efforts redistributed school children in ways that dealt with racial issues. School funding reforms redistributed resources so that school spending would not simply be a function of local property tax laws. Public pre-K investments really aimed to redistribute the timing of public investments back to the earliest years of cognitive development. And all three of these reforms have typically been implemented in very isolated,

singular ways. We find that it's really the synergy between these policies that has the ability to transform and break the cycle of poverty.

There's a lot that went into marrying quantitative data and qualitative data. Quantitative data provides an aerial view of the structural and systemic components of these changes, while qualitative data provides on-ground lived experiences and perspectives of education leaders includ-

ing early pioneers of integration efforts teachers, principals, activists, and supreme court judges. My detailed interviews with them fortified my perspective. It taught me so much about what is missed in quantitative data when it is analyzed in separation from these experiential insights. It also taught me about what is missed in qualitative and revisionist histories of issues when

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people don't have some of the analytical tools to think about whether their personal experience is generalizable.

BPPJ: In your book, you quote Mark Twain a lot, saying "What gets us into trouble is not what we don't know. It's what we know for sure that just ain't so." You go on to then discuss some of these myths that surround integration and segregation in schools. Can you tell us more about what those myths are and why you think they're so persistent still?

R. Johnson: I think one of the biggest myths is that we've carried out integration efforts for a very sustained time and they just haven't been successful. When you really look at the evidence, there was only about a 15-year window in which major integration efforts were done. It is the road less traveled, particularly recently. We reached peak integration levels in 1988, but we didn't really make sincere efforts towards it. Integration efforts were to comply with the Brown Order, and didn't really start until more than a de-

cade after the Brown decision along with the 1964 Civil Rights Act, which put teeth and enforcement in. It was really just the window of time between 1970 through the mid to late 1980s, when we had major integration efforts. And it's that period where we see the largest racial convergence in academic achievements, earnings, and adult health.

BPPJ: Ultimately, the U.S. has kind of abandoned that integration project. And, you know, that decision has led us to this moment where school segregation is nearly as extreme - or maybe even more extreme - as it was before the Brown v. Board decision. I was curious if you could just walk us through how we got here and why the situation is the way it is now.

R. Johnson: I think the things that make it more complex today is that most of the school segregation that existed in the earlier era happened within school district boundaries. And so the need to do busing

was because of the explicit exclusionary housing ordinances that restricted where black families could live. But today, around two thirds of the school segregation actually exists between districts. So a lot of our economic residential segregation is driving a lot of the actual school segregation. For example, between 40 and 42 percent of Black and Hispanic students attend schools where less than 10 percent of their peers are non-Hispanic whites.

Racial segregation has its biggest impacts on contemporary student achievement and gaps in education opportunity because it tends to concentrate Black and Hispanic students in concentrated poverty schools that are overcrowded, that have much fewer resources, that have limited school facilities and larger class sizes and lower teacher salaries. We're talking about the kinds of environments that the highest quality teachers tend to get burned out of working in and are more likely to leave.

Today, when we look at current rates of school resource disparities, Black and Hispanic children are about twice as likely to be taught by inexperienced teachers than non-Hispanic white students. In about half of all states minority students are more likely to be taught by inexperienced teachers than experienced ones.

There's a certain apathy that the country has developed: that segregation is inevitable and that it's just a consequence of the school choice movement and it's really

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what parents want and that there's not really a law or policy reason that undergirds it. And I think that that's another myth, because there is a lot of policy that has fueled the re-segregation of schools. It is intentional. It is designed. And we have to be honest and transparent about the ways that these policies are undermining our ability to realize the promise of equal opportunity.

We must also think of racism as an infectious disease, as the silence leaving the illness untreated...When it's not confronted, it spreads and destroys the health and well-being of our children.

BPPJ: Listening to you and with everything that's happening right now, it feels like we're really at a low point in terms of segregation. I guess we're curious why you're motivated to keep doing the work and what gives you hope at the moment and how can we go from here to somewhere else?

R. Johnson: To be honest with you, without the classroom, without my capacity to teach students in what we believe is the best public policy school in the country, I think I would be a lot less optimistic about what's possible.

I think that our student leaders are always pushing us forward and pushing us away from the status quo. And I think this moment is one that is our civil rights movement moment. It's turning a moment into a movement.

I think a big part of that is naming the pandemic. We have a pandemic. We call it COVID. But we must also think of racism as an infectious disease, as the silence leaving the illness untreated. And that when it's

not confronted, it spreads and destroys the health and well-being of our children.

I think it's an essential part of the policy prescription for change to include school integration, where students and teachers learn and transmit the power and value of diversity. And [policy] students often go on to work in certain occupations that must have a higher standard of accountability. There's really

no margin of error in some of these occupations, especially for policy leaders in law enforcement, health care, and education. I think in those particular sectors specifically, we must demand that our individuals receive training and develop certain sensitivities about both implicit and explicit biases. This training must promote anti-racist views and practices. When racist belief systems are deeply embedded into the culture and the system and DNA of organizations then the risks of what happened in Minneapolis are more likely, and we're seeing this across the nation all too often.

When law enforcement assumes guilt versus innocence. When educators are systematically under-educated. When students internalize low expectations for performance. When our healthcare system ceases to be preventive and accessible care. When these things happen, the consequences are tragic and destroy our capacity to realize equal opportunity and true racial justice for all. And in that way, I would say, my book was written for this moment.

So that's why I'm actually very optimistic about not just the November election. There's a multiracial coalition forming – we see it here at GSPP – that demonstrates that people are identifying with the movement apart from their own personal identity. People are giving of themselves to speak out, to speak up and to not just be a “think tank”, but to move to be a “do tank” around many of these issues. All of these pieces -- education, health care, and criminal justice -- have to be thought of as interconnected parts of a whole.

BPPJ: Along the lines about this present moment and ongoing conversation about police brutality, there's been a lot of conversation about diverting funding from the police to other public services, such as education, health care, and social services. If a higher proportion of local budgets were allocated to education, how do you think it should be spent? How does your research inform how districts and departments of education should prioritize spending money, especially to promote upward mobility for low-income students and students of color?

R. Johnson: Like Martin Luther King once said, “Our public budgets are moral documents that communicate our value.” When we are spending more on criminal justice expenditures in California than on our higher education system, when we have local police budgets that make up more than fifty-five percent of the local budgets in some cities that are crowding out equitable investments in education and health care, we have to revisit the set of commitments to ensure that our budgets are really maximizing how we invest in our communities.

Remember, prevention is the best cure. What our results show is that high-quality education is transformational justice. Our results demonstrate that one of the most effective antidotes to criminal involvement in adulthood is access to high-quality schools in youth. And too often, the antecedents are delinquency and poor schooling outcomes. A lot of the fiscal pressures from skyrocketing incarceration have crowded out these public childhood investments in education and health over the past 15 years. And, generally, we haven't really had the politics to address that. Part of that is that these investments in education take a while to materialize as a long-term benefit. A lot of the benefit actually more than pays for itself down the road in avoided crime costs, lower healthcare spending, in much more productive citizens, in higher educational attainment, and in less remedial costs.

Prior to the pandemic, 70,000 juveniles were placed in detention each day in the US. What the research shows is that juvenile detention doesn't deter crime, but it actually has a criminogenic effect and increases the likelihood of future criminal involvement. While I may not be the biggest fan of what slogans we put to the movement to reprioritize funding for police, we can put funding toward things in the preventative realm that may be much more effective such as investments in mental health services and counseling in schools.

We have young kids in Oakland public schools -- a third grader and a seventh grader who are really missing their schools right now. And when the Oakland Public School District recently severed their ties with the Oakland Police Department to no longer have police officers in the schools, I thought, there's been decades of advocacy

around that very issue. And I believe that without George Floyd and other tragic killings and the racial unrest that's spawned from it, that decision might not have happened.

Many of these schools have had the presence of police officers, but no guidance counselor and no nurses in the school. That reality communicates value. It communicates that we're more interested in protecting property than we are in investing in a child's future. And those are implicit biases that we don't see in affluent, predominantly white communities. We see those types of policies disproportionately targeting minority communities, and that's where we really can't pretend like this is a race-neutral set of issues. The racial justice lens has to be front and center to address these issues.

There's something about the pandemic as a virus that doesn't consider boundaries, doesn't consider race. But it has racially disparate impacts because of the intersection of job quality, who's an essential worker and who's not, the composition by race of essential workers, and the multi-generational home settings of a lot of Latinx families where elderly family members are potentially vulnerable. And right now, our lower-income and minority communities are bearing the brunt of these inequities. This means that we can't have policy responses that are not targeted toward the most vulnerable communities.

That's what was done in the same way by [Hurricane] Katrina in New Orleans. It shined a light on something that was already happening for a long time. I think another mission of the book is to tell the stories and the journeys of people who are

not being included in the policy process or in the implementation of our equity goals.

I am so thankful for Christina Urquiza, a GSPP MPA graduate of 2020, who is taking the pain of tragically losing her father to COVID and sounding the alarm about the racial disparities of the disease & dangers of policymakers' negligence. Her voice is being heard nationally, as she cares for her mother who also contracted COVID. The governor in Arizona, where they live, was being very irresponsible and not proactive, very much aligned with the Trump administration on COVID response. Her father was a casualty. But when that happened, like so many GSPP graduates and current students, her response was to figure out a way to be a voice to other communities so that this doesn't have to continue. And I think it's that kind of racial justice and social justice lens for our work that has me more hopeful that we're going to rise to the challenge and reignite a democratic process that leads to bold, ambitious, and analytically rigorous policies.

BPPJ: We've talked about how defunding the police and reallocating funds could benefit education or health care. However, the pandemic has caused a recession, and cuts to education and other programs seem really likely. What do you think are the most important questions that researchers and policymakers should be asking right now to predict the long-term impacts of COVID-19 on education? And what do you think are the most urgent approaches that could mitigate those effects? What can we do right now or advocate for right now that could prevent harm?

R. Johnson: I think reopening schools has to be done in an environment where we do

not treat teachers like they're just necessary casualties. It cannot be done without having some kind of testing infrastructure and some kind of safety precautions. The lack of a nationwide approach COVID-19 is part of how we got here. I think the COVID-19 response in the education sphere has to recognize that the digital divide is something that's reinforcing existing educational inequality. Some communities have the technology needed for remote learning, but a lot of our parent networks don't have access to that technology.

We live near a world-class University. That proximity gives us access to online resources for teaching. My wife and I are lifelong educators, so there are certain things that we can give our kids. But that is not going to be typical when students can't get that support from schools. Schools are a big leveler of the playing field when resources are distributed equitably. I would say there's a certain approach to all of these issues that require what's called targeted universalism. The way I think of this particular principle as it relates to equity and inclusion is to start by identifying the communities that are most vulnerable, and addressing the needs of the least first, in order in order to best serve all.

BPPJ: You talked about investing in high-quality early childcare, specifically as a way to help people recover from the adverse economic effects of COVID-19. Can you elaborate on those findings?

R. Johnson: It's the neuroscience research on early brain development that has led to breakthroughs in our understanding about the amazing growth that happens in the first three to five years of life and the astonishing speed with which synapses are connected. A million new net neural connections develop every second in the young developing brain between zero and three, and it is sensitive to nurturing interpersonal interactions with caregivers.

There's a certain approach to all of these issues that require what's called targeted universalism...To start by identifying the communities that are most vulnerable, and addressing the needs of the least first, in order in order to best serve all.

The early childcare subsidies that states and federal governments have provided have not been sufficient, but they have certainly been essential to ensuring that many low-income families who are either single parent or dual career house-

holds -- many of them school teachers and health care workers -- are financially supported.

There's a moral argument for investing in early pre-K that has nothing to do with whether it pays off in the long run. But what is striking is in addition to the moral imperative, these public investments have significant developmental multiplier effects. They have synergistic impacts on school readiness and therefore, affect the efficacy of subsequent public K-12 investments. We can get more students to become more school-ready and invest in these sensitive periods of development. The mere empirical fact that half of the achievement gap we see among third graders already existed since kindergarten highlights the powerful footprint of the early pre-K

period. This period is one in which we can ensure socioemotional development and significantly impact cognitive functional development.

We actually do a number of studies that examine previous studies of earlier policy efforts. But we also use more recent studies that are using the California state public pre-K investments and the state local control funding formula changes to look at the synergies between early pre-K investments and K-12 investments to show the ways in which these have the power to narrow achievement gaps and expand opportunity. One thing connected to essential workers is that pre-K teachers are some of the lowest paid, less economically secure, but they are vital to children in development and for families that are trying to balance a lot of things. When the pandemic first happened, one of the biggest things you would hear is that we appreciate our teachers because they are on the frontlines. And somehow that sentiment has faded away. I thought we were on the cusp of a major re-visiting of teacher salaries, our investments in teachers-- and not just like expansions of access but expansions in the pay that will attract higher quality teachers to sustain their impacts in classrooms. I think both of those things are necessary.

Bryan Stevenson has this quote that says "The opposite of poverty is not wealth. The opposite of poverty is justice." And there's

also an old adage that "It takes a village." And what I'm trying to add with these quotes is that it takes a village and a policy movement. Part of that policy movement has to include a school funding policy reform movement that includes pre-K and a progressive funding formula that equally distributes school resources to ensure that educational opportunity is realized for all children, irrespective of zip code and race.

It's really the love of our children and their future that's the motive. The just school funding formula is the instrument. What's embedded in the whole aspiration of my work is that I view narrowing the achievement gap, which funding inequities helped create, as the educational equivalent of the

It takes a village and a policy movement. Part of that policy movement has to include a school funding policy reform movement that includes pre-K and a progressive funding formula that equally distributes school resources to ensure that educational opportunity is realized for all children, irrespective of zip code and race.

fight against cancer. While it's not life and death, addressing this gap is life-altering for children's future. We must design our policies to do better, to do better for our students, and to do better for our collective future. The policy focus of the work is really about the pre-K and K-12 sectors and the way that we structure too often in siloed

ways is one thing we need to address.

BPPJ: We've seen some moves towards changes in higher education in California. You're a proponent of repealing Prop 209 as well removing the S.A.T. from the UC admissions requirements. Can you explain why?

R. Johnson: The students that are admitted to our most selective, higher public and private institutions are increasingly from much wealthier backgrounds. Most university classrooms are not economically diverse, and often not racially or ethnically diverse either. That's not only about financial aid access, but it's about our admissions policies. And it has connections with how our K-12 system is segregated that affects college readiness. Re-segregation leads to greater segregation in the higher education system.

These things that are not viewed as connected because people who focus on pre-K are in their bubble and people who focus on K-12 are in their bubble. And the people who do higher ed are disconnected from either of the previous two, but we need to think of this all as interconnected.

One of the things that higher education does is that it really brings together people from very different backgrounds. It creates opportunities for exchange and dialogue around difference. Proximity to difference is a key aspect of what fortifies the value of a higher education institution. Without it, we lose so much. One of the things that we find in the book is that by analyzing data on children followed into adulthood, the resegregation of public K-12 schools has contributed to the increases in racial bias, racial intolerance, and rising polarization of political views that we observe expressed

The resegregation of public K-12 schools has contributed to the increases in racial bias, racial intolerance, and rising polarization of political views that we observe expressed in adulthood...These effects are rooted in a lack of exposure to racial and ethnic diversity in schools and are most pronounced among white Americans.

in adulthood. We find that these effects are rooted in a lack of exposure to racial and ethnic diversity in schools and are most pronounced among white Americans. It's not only that, but children in these schools also struggle to develop empathy and the ability to appreciate the abilities of other cultures.

Those are not outcomes that are easily characterized in a test score, but they are the kind of conditions that can affect our ability to produce great leaders. We need to not be thinking of diversity as a burden but rather the lack of it as a serious liability for all of our collective growth.

You see places like UC Berkeley and UCLA, for example, that have been lifted up as key engines of upward mobility, as institutions that enroll, produce, and graduate more low-income students than the entire Ivy League put together. I also think that Prop 209 significantly affected that. Again, we're talking twenty-five years of outlawing affirmative action. That is ahistorical and it provides understanding about why proactive measures to increase the diversity of incoming classes throughout the UC system are imperative.

There is more recent evidence coming out from the UT system to show the value of affirmative action policies and the detrimental consequences of banning the use of that data. In addition to the activism that has led to a revisiting of whether

we're putting too heavy an emphasis on S.A.T. scores for admission and whether those S.A.T. scores are accurate indicators for aptitude and ability for lower-income and minority students compared to affluent students, there are also questions around whether we're using the right criteria to identify the best and brightest in our most selective higher ed institutions. Those criteria are being reconsidered in the same environment as this racial unrest and the fact that UC Berkeley itself has a 30 to 40 percent increase in underrepresented minorities this upcoming year. For the first time in more than two decades, incoming Black and Hispanic student representation is higher than in any other period since basically Prop 209 was instituted. We are in an election year where Prop 209 is likely to be on the ballot for voters to reconsider repealing it in order to allow race (among many others) to be considered as a factor for admissions. And I think these are really important conversations to have that will propel us forward.

In my opinion, the single most important statewide issue for UC-Berkeley is Prop. 16 --Yes on Prop 16 is our chance to end the ban on affirmative action and expand opportunity for all. Unfortunately, recent polling indicates that the proposition will fail if we don't reverse the tide. We need to figure out how to communicate the importance of this issue to the public & mobilize our collective energies to build more political support—I'm talking a multi-racial coalition—in support of this proposition.

Proposition 15 is an additional one on the November ballot with large consequences for expanding education opportunity & funding. If passed, it will raise up to \$12 billion

in new revenues for education and local governments by requiring that many commercial and industrial properties be assessed at fair market value. Jesse Rothstein led a group of economists and we wrote a letter in support of Proposition 15 and the expected economic impacts of the measure.¹ Our letter on Proposition 15 was released and linked in last Sunday's *LA Times* editorial.²

BPPJ: Can you tell us about your upcoming research? Where have your interests pivoted since your book was published?

R. Johnson: Through a partnership with the Learning Policy Institute and the U.S. California Department of Education, I was able to acquire the full universe of student level records for all the cohorts born between 2000 and the present, which allows me to follow their trajectories through the K-12 system. I am able to link each student record to their school resources, school environments, school quality, teacher quality, class size, race/ethnicity, whether they had access to pre-K, and whether they graduated from high school. These data allow me to document the impacts of our policies.

Particularly, I can document the impact of our Local Control Funding Formula (LCFF), which is the most sweeping policy. It's an \$18 billion commitment over eight years, which was signed into law in 2013. The local control funding formula is weighted to target resources toward disadvantaged students to try to ensure that school level resources weren't driven by local property tax wealth. We document the significant narrowing of achievement gaps before this most recent coronavirus pandemic. The trajectory of improvement was stark and striking. In the fall, I'll be re-

leasing a major study on that that I'm really excited about.

I think this study will provide hope. I also hope that when the state legislature is thinking about budget cuts, they rethink making cuts to public education. Especially given that districts that are disproportionately suffering from the pandemic will need more resources, not less. Hopefully the evidence will inform some of the political discourse to ensure that there aren't a lot of teacher layoffs as we're trying to recover from what will be a deep recession. I'm excited that we've identified some really effective policies.

Also, we also recently published a study led by my PhD students Sean Darling-Hammond from GSPP and Eli Michaels from the School of Public Health in which we were interested in answering timely questions during the pandemic such as: To what extent did the pandemic contribute to increased xenophobia and racism? How has divisive rhetoric from politicians and the media affected stereotypes about Asian Americans?

We observed that on March 8th, 2020, there was a 650% increase in Twitter retweets using stigmatizing terms like "Chinese Virus" and "Wuhan Virus" to describe the Coronavirus. This was followed, on March 9th, by an 800% increase in utilization of these terms in primarily conservative news media (and which is coincident with more

than 800 hate crimes against Asian Americans in California since the COVID outbreak). In this study, we document that this uptick in stigmatizing language increased bias against Asian Americans, based on data from Project Implicit (2007-2020, N=339,063). Furthermore, the increase in bias was more pronounced among conservative individuals, suggesting that conservative media may indeed have played a role. NBC news covered our study and the news article was recently released.³

We need more leaders that have that sense of interconnectivity and can bring a multidisciplinary lens, a multi-sector, and intersectional perspective. These are the kinds of policy leaders that can break down some of the silos that limit our ability to have a holistic, bold, ambitious, and effective policy change.

BPPJ: Us GSPP students are preparing to continue our careers during a pandemic or, during the recovery from the pandemic. Do you have any advice that you can share with us?

R. Johnson: All of you bring a wealth of, not just professional experiences before you got to GSPP, but a set of lived experiences that give you certain perspectives. You're going to be able to bring some of the insights from your previous work, your life, and your learnings at GSPP together. I think what's really important is breaking down the silos between issue areas. For example, when you're doing work in health care, you understand how housing and some of the social and nonmedical determinants of health are produced, or when you're working in education, that you would recognize how housing policies affect district boundaries, that these invisible boundaries can have detrimental consequences of who has access to quality schools and who doesn't. When

you are working in criminal justice policy, you would recognize that we have to think about how police budgets are connected to public school budgets and connected to public health care investments, and that we would have to think about them integrated as a whole. My book has a theme of integration, but I would say my teaching philosophy and I think the philosophy of GSPP is that we need more leaders that have that sense of interconnectivity and can bring a multidisciplinary lens, a multi-sector, and intersectional perspective. These are the kinds of policy leaders that can break down some of the silos that limit our ability to have a holistic, bold, ambitious, and effective policy change. I think the silos and the kind of separatist ways in which we design policies in a vacuum is a big part of why we've had very lukewarm effects.

I think you all will forge a new generation of policy design and implementation that will counteract that prevailing status quo. That's why we need more of you. And we want your representation to be multiplied in the fields. And, you know, I'm looking

forward to seeing that. For me, one of the greatest achievements of being a professor is not how many journal articles I publish, but it's the accomplishments of our graduates. It's like I get to be a part of their success. That's where the hope comes in. It's also where the enjoyment of the work really resides.

ENDNOTES

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