CITIES AS EMERGENT SYSTEMS: RACE AS A RULE IN ORGANIZED COMPLEXITY

BY

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Human beings are now an urban species. Today, the majority of the world's human beings live in cities. At the same time, cities are perceived as chaotic and mysterious, beyond the ability of policymakers to shape and control. Such perceptions have significant implications for governance and urban policy, and for justice and equity in cities. If the patterns of inequity in cities are the result of mysterious forces, then managing or governing for justice becomes impossible.

For example, environmental justice theorists have despaired of understanding whether the distribution of environmental hazards in cities is caused by market forces, or by racial discrimination. While it is clear that certain neighborhoods host a disproportionately high percentage of environmental "disamenities," there has been no framework for understanding whether race is the cause of such inequity. Without pinpointing the roots of environmental injustice, there is no political, legal, or moral impetus to remediate overburdened urban neighborhoods.

We present a method for understanding cities not as chaotic and mysterious, but as complex, emergent systems that are amenable to study and to management. We argue that a close study of cities through the lens of emergence theory can reveal and make sense of urban patterns. In this Article, we apply that lens to environmental justice to identify the distributional patterns in cities and to identify the rules that create those patterns. As such, we argue that cities can modify the rules and the patterns in an urban system in the cause of justice.

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I. INTRODUCTION

Human beings are now an urban species. At the dawn of the twenty-first century, the majority of the world's human beings now live in cities—and by the middle of the century, eighty percent of human beings will live in cities for the foreseeable future.[1] At the end of the twentieth century some select cities in the developed world enjoyed a renaissance, as evidenced by slight increases in population and reductions in crime.[2] However, there is a wide sense that in the twenty-first century "even the best-positioned urban areas face severe demographic and economic challenges."[3] The received wisdom is that either misery is a given for most urban dwellers, or that misery emerges in urban life through forces beyond our control.[4] Even as the global population of cities skyrocketed, urban scholars predicted the end of cities as successful human settlements.[5] Furthermore, the city has been treated as something of a mystery, and as such, as an intractable problem.[6] As Michael Batty wrote recently in *Science*, "Cities are still seen as manifesting a disorder and chaos."[7]

Accepting the notion that cities are chaotic and mysterious, beyond the ability of policymakers to shape and control, has significant implications, not just for notions of governance and urban policy, but also for issues of justice and equity. That is, if cities are chaotic and unmanageable, then misery and injustice are a given for many if not most urban residents.

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1 J. Morgan Grove, *Cities: Managing Densely Settled Social-Ecological Systems*, *in* PRINCIPLES OF ECOSYSTEM STEWARDSHIP: RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT IN A CHANGING WORLD 281, 281 (F. Stuart Chapin, III et al. eds., 2009); *see* Larry E. Band et al., *Heterogeneity in Urban Ecosystems: Patterns and Process*, *in* ECOSYSTEM FUNCTION IN HETEROGENEOUS LANDSCAPES 257, 257 (Gary M. Lovett et al. eds., 2005).

2 JOEL KOTKIN, THE CITY: A GLOBAL HISTORY 148 (2005).

3 *Id.* at 151.

4 Michael Batty, *The Size, Scale, and Shape of Cities*, 319 SCI. 769, 769 (2008) (noting that throughout the 19th century commentators decried cities as "wretched" and arguing that "[t]hese sentiments have dominated our approach to cities to this day"); *see also* KOTKIN, *supra* note 2, at xvi–xvii (arguing that the "sprawling" cities in the developing world lack functioning economies and stable political orders, while the cities in the West and developed portions of the East and South Asia "lack a shared sense of sacred space, civic identity, or moral order").

5 *See* DOUGLAS W. RAE, CITY: URBANISM AND ITS END 2 (2003) ("[T]he city in which his business is designed to operate is *gone* . . . .").

6 Batty, *supra* note 4, at 770 (arguing the rules that have been used in the past to design the ideal city "rarely provide the quality of life for their inhabitants that such order anticipates").

7 *Id.* at 769.

If cities display patterns of inequity and such patterns are the result of mysterious forces, then managing or governing for justice becomes impossible or unlikely.

For example, in our field of environmental justice, theorists have largely despaired of understanding whether the distribution of environmental hazards in cities is caused primarily by market forces, or by racial discrimination.[8] Thus, while the evidence is overwhelming that African-American and Hispanic neighborhoods play host to a disproportionately high percentage of environmental "disamenities,"[9] there has been no framework for understanding the role of race as a causal factor in distributional inequity. Without a fuller understanding of the roots of environmental injustice, it is hard to chart a way forward for overburdened urban neighborhoods.

But what if we could understand how and why misery arrives in urban neighborhoods? Is it possible to unpack the mystery and change the outcomes? Our project here is to evaluate whether it is possible to study cities in order to demystify the patterns in modern cities. Specifically, we examine whether race or the market plays the central role in the distribution of a host of environmental disamenities such as junkyards and polluting businesses in the city of Baltimore. We show that though there may be no explicit racism in the decisional records regarding land use and disamenities,[10] we can nonetheless identify that race was the critical factor in the patterns that emerged.

In this Article, we begin by examining a method for understanding cities not as chaotic and mysterious, but as complex, emergent systems that are amenable to study and to management. As we discuss below, though the great urban theorist Jane Jacobs first articulated this method for studying cities over forty years ago, it has never been fully explored.[11] Using this method as a lens for studying the city, we propose that the patterns in urban systems, and the rules that create those patterns, can be understood and evaluated.[12]

In Part III we look at one urban pattern: the distribution of environmental disamenities. Though there is not unanimity on the point, the overwhelming weight of the evidence suggests that one characteristic pattern of the twentieth century city was the unequal distribution of such disamenities.[13] Specifically, the evidence indicates that African-American neighborhoods hosted an unequal share of these land uses.[14] Our review of the studies shows that there has been very little work on whether the distributional patterns in cities over time are a function of race, the market,

8 *See infra* Part III.

9 This is our phrase for environmental hazards and unwanted land uses that have environmental effects.

10 *See infra* Part VI.

11 *See generally* Batty, *supra* note 4, at 769 (describing the "inadequate" understanding of the evolution of cities and the slow development of the field).

12 *See id.*; *infra* Part II.

13 *See infra* Part IV.

14 *See infra* notes 155–56 and accompanying text.

or both.[15] Absent a clear indication of the role of race as compared to market forces, there is little political and moral weight behind repairing the neighborhoods that are burdened with high levels of unwanted land uses.

In Part IV, we turn to a specific city and to its pattern of environmental harms. We looked at the city of Baltimore to determine whether there is a pattern of unequal distribution and whether race or market forces seemed to be the dominant rule in the pattern of environmental distribution. Through an exhaustive review of zoning conditional-use decisions, we found that in each decade from 1940 to 2000, the Zoning Board of Appeals and the City Council approved conditional uses such that African-American neighborhoods hosted significantly higher numbers of disamenities than did white neighborhoods.[16] By reviewing the data within each decade, we illustrate that race was the critical causal factor in the siting patterns.[17] Nothing in the zoning code or the decisional records illustrated overt racism in the land-use process in Baltimore over the period from 1940 to 2000.[18] Only by understanding the city as a complex system is it possible then to untangle the mystery of these outcomes and to unpack how race became a causal factor.

In Parts V and VI we use the model of cities as complex systems[19] to unpack the systemic rules that created the pattern of unequal distribution. Understanding cities as systems helps us to frame our data in a new way and to ask an important and unique question: How might race have emerged as a rule in a facially neutral system? Using the model of cities as emergent systems creates a lens through which to study the land-use system over time; a lens that helps us illustrate how explicit racism in the early part of the twentieth century was incorporated into a facially neutral zoning system over time. Using this approach, our data confirms that race, much more than market forces, served as the rule for generating disproportionate environmental impacts on African-American neighborhoods in one city—Baltimore.[20] Illustrating that race was the rule changes the approach to rebuilding urban neighborhoods. Evidence that race as a rule created the current conditions calls on cities to undertake a systemic analysis of the land-use legal and policy system and to consider remedies to existing conditions.

We argue, in sum, that cities are not a chaotic mystery. A close study of a city through the lens of emergence theory can reveal, and make sense of, the distributional patterns in a city. In this Article, we apply that lens to the issues of environmental justice to identify the rules that create those patterns. As such, we argue that it is possible to understand and then to modify the rules and the resultant patterns in an urban system in the cause of justice.

15 *See infra* text accompanying notes 43–59.

16 *See infra* notes 155–56 and accompanying text.

17 *See infra* fig.4.

18 *See infra* notes 155–57 and accompanying text.

19 See *infra* Part II for a full description of this model and its sources.

20 *See infra* Part VI.

II. CITIES AS EMERGENT SYSTEMS

Some urban scholars have begun to argue that cities are not disordered systems and in fact that "[b]eneath the apparent chaos and diversity of physical form, there is strong order and a pattern that emerges from the myriad of decisions and processes required for a city to develop and expand physically."[21] Many urban theorists now argue that cities are complex adaptive systems that display emergent behavior,[22] and that "cities grow from the bottom up."[23] In other words, emergence theory suggests that cities grow from the choices and behaviors of their individual residents and institutions and not from the dictates of the central planners.

As such, some argue that cities are self-organizing systems.[24] Such systems display an organized complexity in which patterns and shapes emerge over time through the interactions of individual actors.[25] Self-organizing systems create order not from the decisions of a central authority, but rather order and patterns emerge from the decisions and behaviors of individual actors in the system responding to the system's rules and its feedback loops "driven by diverse interests, agencies, and events."[26] As Stephen Johnson writes, "The city is complex . . . because it has a coherent personality, a personality that self-organizes out of millions of individual decisions, a global order built out of local interactions."[27] Patterns of change in a self-organizing system like a city can emerge at the edges of human consciousness—as a sort of macrodevelopment, through the interaction of multiple variables at a millennial scale.[28]

And yet, though cities are difficult to comprehend, they are not chaotic, nor are they a mystery. The system is complex because there are many actors, but it is organized because the various interactions of these countless individuals and institutions follow a network of systemic rules that create a "distinct macrobehavior."[29] Understood as a problem of "[o]rganized complexity," it is possible to study the city as a living ecosystem, capable of adaptive change.[30] In fact, researchers can draw on the methods of science to seek out and understand the rules that govern or pattern the behavior of individual actors.[31] In short, we can uncover and describe the local, systemic rules that drive the emergent structure that is the modern city.

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21 Batty, *supra* note 4, at 769.

22 The first to make the case was the great Jane Jacobs in the *Death and Life of Great American Cities*. *See* JANE JACOBS, THE DEATH AND LIFE OF GREAT AMERICAN CITIES 428–34 (1961); *see also* STEVEN JOHNSON, EMERGENCE: THE CONNECTED LIVES OF ANTS, BRAINS, CITIES, AND SOFTWARE 18 (2001).

23 Batty, *supra* note 4, at 769.

24 Grove, *supra* note 1, at 286.

25 JOHNSON, *supra* note 22, at 46–48.

26 Grove, *supra* note 1, at 292; *see also* Batty, *supra* note 4, at 769.

27 JOHNSON, *supra* note 22, at 39.

28 *Id.* at 98–99.

29 *Id.* at 48.

30 *Id.* at 52.

31 JACOBS, *supra* note 22, at 439–40.

Emergent systems are neither inherently good, nor inherently bad—essentially, an emergent system can work toward many different kinds of goals or patterns depending on the rules inherent in the system.[32] If an emergent system and its feedback loops (the rules) create outcomes that we do not like, then it is possible to seek a better system by changing the rules that drive the individual actors.[33]

Jane Jacobs argued four decades ago that the tactics for understanding cities are much like those used for understanding the life sciences, given that both present problems of organized complexity.[34] Specifically she called for a microscopic analysis of cities that begins with the identification of a specific factor or quantity in the system and then "painstakingly learn[s] its relationships and interconnections with other factors or quantities."[35] Jacobs argued that "[f]or cities, processes are of the essence," and that with the focus on process comes an additional emphasis on the catalysts of these processes.[36] The rules at play in a system of organized complexity provide a mix of positive and negative feedback that push "the system toward a particular state based on the activities of the participants."[37] Adjusting the feedback loop generates a new type of system.[38] Put another way, understanding the systemic rules is the first step toward understanding the feedback loops and then the patterns in an emergent system like a city and thus the first step toward social change. As Stephen Johnson argues,

> When we come across a system that doesn't work well, there's no point in denouncing the use of feedback itself. Better to figure out the specific rules of the system at hand and start thinking of ways to wire it so that the feedback routines promote the values we want promoted.[39]

Understanding the city as a problem of organized complexity provides a powerful framework for studying its challenges and opportunities. Problems of organized complexity "present 'situations in which a half-dozen, or even several dozen, quantities are all varying simultaneously and in subtly interconnected ways.'"[40] Though "the variables are many, . . . they are not helter skelter; they are 'interrelated into an organic whole.'"[41] This science of cities can be used to develop empirical understanding of how cities function and then to inform operational tools to address a whole range of diverse issues.[42]

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32 JOHNSON, *supra* note 22, at 137.

33 *Id.*

34 JACOBS, *supra* note 22, at 443.

35 *Id.* at 440.

36 *Id.* at 440–41.

37 JOHNSON, *supra* note 22, at 159.

38 *Id.* at 162

39 *Id.*

40 JACOBS, *supra* note 22, at 433 (emphasis omitted) (quoting Warren Weaver, *A Quarter Century in the Natural Sciences*, *in* THE ROCKEFELLER FOUND., ANNUAL REPORT 1, 9 (1958)).

41 *Id.* (quoting Warren Weaver, *A Quarter Century in the Natural Sciences*, *in* THE ROCKEFELLER FOUND., ANNUAL REPORT 1, 14 (1958)).

42 Batty, *supra* note 4, at 770–71. This issue is as diverse as climate change and "ethnic segregation and deprivation due to failures in job and housing markets." *Id.* at 771.

III. PATTERNS OF EMERGENCE IN URBAN AMERICA

One pattern that emerged in American cities in the twentieth century was the unequal distribution of environmental inequities on the basis of race. The overwhelming weight of the evidence suggests that African-American and Hispanic neighborhoods host a disproportionately high percentage of environmental harms.[43] The root causes of this distributional pattern, however, are still subject to debate. Some theorists argue that racism is the root cause for this pattern[44] and others argue that market forces cause this pattern.[45] Ultimately, a consensus has emerged that this pattern is a result of a mysterious confluence of race and the market, and, as such, there have been few, if any, studies that attempt to pinpoint the role of racism in creating this pattern.[46] Lack of clarity on the root cause has significant implications for the future of urban neighborhoods.

Over the past five decades, dozens of researchers have documented inequitable distributions of locally unwanted land uses (LULUs) in residential areas throughout the nation.[47] This body of research

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43 *See, e.g.*, Jane Kay, *Minorities Bear Brunt of Pollution*, S.F. EXAMINER, Apr. 7, 1991, at A1, *available at* 1991 WLNR 44180.

44 *See, e.g.*, Kathy Seward Northern, *Battery and Beyond: A Tort Law Response to Environmental Racism*, 21 WM. & MARY ENVTL. L. & POL'Y REV. 485, 550 (1997) (asserting that the "root causes" of environmental racism include "racially discriminatory exclusive or expulsive zoning practices").

45 Lynn E. Blais, *Environmental Racism Reconsidered*, 75 N.C. L. REV. 75, 81 (1996).

46 *See* LUKE W. COLE & SHEILA R. FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 58 (2001).

47 *Id.* at 54–55, 167–83. For instance, researchers have concluded that low-income and minority communities suffer from inequitable distributions of LULUs in many states and cities. *See, e.g.*, AFRICAN AM. ENVIRONMENTALIST ASS'N ET AL., OUR UNFAIR SHARE: A SURVEY OF POLLUTION SOURCES IN OUR NATION'S CAPITAL 6 (1994) (finding that even though Washington D.C.'s overall population is 65% African-American, the area with the least pollution is 88% white); ROBERT D. BULLARD, INVISIBLE HOUSTON: THE BLACK EXPERIENCE IN BOOM AND BUST 70–75 (1987) (finding that the distribution of municipal landfills and incinerators in Houston had disproportionate racial impact independent of class); LAURETTA M. BURKE, NAT'L CTR. FOR GEOGRAPHIC INFO. & ANALYSIS, ENVIRONMENTAL EQUITY IN LOS ANGELES 46 (1993), *available at* http://downloads2.esri.com/campus/uploads/library/pdfs/5869.pdf (finding that poorer areas with higher populations of people of color have the greatest number of Toxic Release Inventory facilities and finding also that race is slightly better at predicting the presence of Toxic Release Inventory facilities than income); SUSAN CARIS ET AL., THE SOCIAL BURDENS OF ENVIRONMENTAL POLLUTION: A COMPARATIVE METROPOLITAN DATA SOURCE 563, 569 (Brian J.L. Berry ed., 1977) (concluding that solid waste sites in Chicago are distributed inequitably by income and race); COUNCIL ON ENVTL. QUALITY, ENVIRONMENTAL QUALITY: THE SECOND ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY 192 (1971) (finding that air pollution in Chicago is inequitably distributed by income); FLA. ENVTL. EQUITY & JUSTICE COMM'N, FINAL REPORT 5 (1996) (finding that low-income communities and communities of color suffer disproportionate environmental impacts in Florida); MICHAEL R. GREENBERG & RICHARD F. ANDERSON, HAZARDOUS WASTE SITES: THE CREDIBILITY GAP 158–59 (1984) (finding that communities with the greatest number of toxic waste sites are home to more low-income and African-American residents than other communities); ERIC MANN, L.A.'S LETHAL AIR: NEW STRATEGIES FOR POLICY, ORGANIZING, AND ACTION 31 (1991) (documenting that 71% of African-Americans and 50% of Latinos live in areas with the worst air pollution, compared to 34% of whites); U.S. GEN. ACCOUNTING OFFICE, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC

overwhelmingly indicates that LULUs are distributed in patterns that strongly correlate to race.[48]

STATUS OF SURROUNDING COMMUNITIES 1 (1983), *available at* http://archive.gao.gov/d48t13/121648.pdf (noting that three of the four commercial hazardous waste sites in eight southern states were located in communities with a majority of people of color); JEFFREY M. ZUPAN, THE DISTRIBUTION OF AIR QUALITY IN THE NEW YORK REGION 2–3 (1973) (concluding that air pollution is distributed inequitably by income in New York); Peter Asch & Joseph J. Seneca, *Some Evidence on the Distribution of Air Quality*, 54 LAND ECON. 278, 293 (1978) (concluding that people of color have higher pollution levels than whites in Chicago and Nashville); J. Tom Boer et al., *Is There Environmental Racism? The Demographics of Hazardous Waste in Los Angeles County*, 78 SOC. SCI. Q. 793, 807–08 (1997) (concluding that working class communities of color are most affected by hazardous waste treatment and disposal facilities in Los Angeles); Robert D. Bullard & Beverly Hendrix Wright, *The Politics of Pollution: Implications for the Black Community*, 47 PHYLON 71, 76 (1986) (finding that even though African-American neighborhoods only account for one-fourth of Houston's population, they host six of the city's eight incinerators and all five city-owned landfills); Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619, 624–28 (1992) (describing how all three of California's Class I toxic waste landfills are in low-income communities that have populations consisting of a vast majority of people of color—between 63% and 95%); A. Myrick Freeman III, *Distribution of Environmental Quality*, *in* ENVIRONMENTAL QUALITY ANALYSIS: THEORY AND METHOD IN THE SOCIAL SCIENCES 243, 268–69 (Allen V. Kneese & Blaire T. Bower eds., 1972) (finding air pollution to be inequitably distributed by race, independent of income, in Kansas City); Kusum Ketkar, *Hazardous Waste Sites and Property Values in the State of New Jersey*, 24 APPLIED ECON. 647, 656–57 & tbl.6 (1992) (finding that in New Jersey, municipalities with the highest percentage of people of color had the largest number of toxic waste sites); William J. Kruvant, *People, Energy, and Pollution*, *in* THE AMERICAN ENERGY CONSUMER 125, 140 (Dorothy K. Newman & Dawn Day eds., 1975) (noting the inequitable distribution of air pollutants as it correlates to race and income); Robert A. Kutcher, *Letter of Transmittal*, *in* LA. ADVISORY COMM. TO THE U.S. COMM'N ON CIVIL RIGHTS, THE BATTLE FOR ENVIRONMENTAL JUSTICE IN LOUISIANA..... GOVERNMENT, INDUSTRY, AND THE PEOPLE, at ii, iii (1993), *available at* http://www.law.umaryland.edu/Marshall/usccr/documents/cr12en8z.pdf (concluding that there has been disproportionate siting of hazardous waste facilities in low-income areas with high percentages of African-Americans in the industrial corridor from Baton Rouge to New Orleans); Paul Mohai & Bunyan Bryant, *Environmental Racism: Reviewing the Evidence*, *in* RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS: A TIME FOR DISCOURSE 163, 171–72 (Bunyan Bryant & Paul Mohai eds., 1992) [hereinafter RACE AND ENVIRONMENTAL HAZARDS] (finding that Michigan's commercial hazardous waste facilities are located disproportionately where people of color live); Marjorie W. Moore, *Environmental Health and Community Action*, N.Y. ST. B.A. ENVTL. L. SEC. J., Feb–May 1991, at 12, 12 (noting that five of Manhattan's seven municipal bus depots are located in predominantly African-American and Latino neighborhoods); Harvey L. White, *Hazardous Waste Incineration and Minority Communities*, *in* RACE AND ENVIRONMENTAL HAZARDS, *supra*, at 126, 131–32 (finding that communities of color had a much higher rate of hazardous waste facilities than white communities in the Baton Rouge area); Kay, *supra* note 43 (finding that the population for the California zip code bearing the greatest total pounds of toxic release was 59% African-American and 38% Latino); Christopher Boerner & Thomas Lambert, *Environmental Justice in the City of St. Louis: The Economics of Siting Industrial and Waste Facilities* 24 (Ctr. for the Study of Am. Bus., Working Paper No. 156, 1995) (concluding that for neighborhoods in St. Louis that host active waste facilities and inactive superfund sites, the percentages of poor people and people of color increased at a faster rate than nonhost neighborhoods).

[48] *See, e.g.*, COLE & FOSTER, *supra* note 46, at 167–83; *see also* BENJAMIN A. GOLDMAN, NOT JUST PROSPERITY: ACHIEVING SUSTAINABILITY WITH ENVIRONMENTAL JUSTICE 3–19 (1993) (cataloguing 64 studies that found disproportionate impact of environmental hazards according to race, income, or both). Luke Cole died in a car accident at the age of 48 during the drafting of

Such studies are not without their critics. One central critique involves methodology—the choice of the unit of analysis and the definition of "minority neighborhood" are both somewhat controversial.[49] Ultimately, however, there is strong evidence that race was connected to higher exposure to environmental hazards, from a variety of environmental standard metropolitan statistical areas (SMSAs).[50] While an evaluation of the evidence "does not reveal inequities at every geographic level with regard to every pollutant analyzed, it confirms many of the widespread disparities observed in previous studies, particularly with regard to race, and especially with regard to African Americans."[51]

The general patterns of environmental justice (EJ) have been borne out in cities, and it seems that urban planning and zoning may play a role in urban environmental injustice. Craig Arnold's study of thirty-one census tracts in seven cities found that "low-income, high-minority neighborhoods contain a greater percentage of industrial and other intensive use zones than do high-income, low-minority neighborhoods."[52] Arnold illustrates that industrial zones are created near residential homes in low-income communities of color, "creating the very sort of incompatibility of uses that zoning is designed to prevent."[53] Arnold suggests that cities overzone to create more industrial tax base and emphasize putting industrial properties in black neighborhoods.[54] Similarly, he suggests that when some cities create more affordable housing they tend to site it in industrial zones.[55] Arnold also argues that some black neighborhoods receive less zoning protection than white neighborhoods because they serve as buffers between white neighborhoods and industrial zones. He writes that "[b]uffer zones are perhaps one of the major reasons why low income and minority neighborhoods have so much industrial and commercial zoning: the multi-family housing, where low-income and minority people live, is purposefully placed near the industrial and commercial uses to create a buffer that protects high-income, white, single-family neighborhoods."[56]

There are however, those who challenge this data on environmental justice and have questioned whether they principally reflect market forces

this Article. He was a mentor to Charlie Lord and a great leader in the field of environmental justice. He will be sorely missed.

49 *See, e.g.*, Alice Kaswan, *Distributive Justice and the Environment*, 81 N.C. L. REV. 1031, 1069 & n.155, 1070–73 (2003).

50 *Id.* at 1069–70; *see also* JAMES P. LESTER ET AL., ENVIRONMENTAL INJUSTICE IN THE UNITED STATES: MYTHS AND REALITIES 13 (2001). James P. Lester and his colleagues evaluated a series of studies at three geographic scales—state, county and city. *See id.* at 7, 57. Their study found that across all scales environmental injustice is present in approximately 86% of the analyses that focus on percent of black population, 50% in the analyses of Hispanic population, and 35%–50% of the analyses of class. *Id.* at 151–54.

51 Kaswan, *supra* note 49, at 1073.

52 Craig Anthony (Tony) Arnold, *Planning Milagros: Environmental Justice and Land Use Regulation*, 76 DENV. U. L. REV. 1, 9, 77 (1998).

53 *Id.* at 81.

54 *Id.* at 132–33.

55 *See, e.g.*, *id.* at 119.

56 *Id.*; *see also* Kaswan, note 49, at 1116.

and not racism. As Luke Cole and Sheila Foster put it, "As with most statistical research, studies that chart the disproportionate distribution of waste facilities simply establish *correlations*, not *causation*."[57] As such, some commentators question whether EJ issues are "appropriately attributed to racism or other injustice or to a more benign explanation."[58]

Essentially, there are those who have argued that the distribution of environmental harms is evidence of distributive injustice and not racial injustice. These distributive explanations can be categorized into two chief, interrelated arguments: 1) that the disparity is caused by social status, lifestyle choices, community preferences of certain racial and ethnic groups, or a combination of those factors and 2) that the disparity is caused by the operation of the free market.[59]

The first alternative explanation for the inequitable distribution of LULUs is that one's social status, occupation, or preference to live near LULUs exposes him or her to environmental hazards.[60] There is indeed evidence that laborers in some cities may have chosen to live close to their places of work and that as such, may have inadvertently chosen to live closer to toxic pollution.[61] In 1992, the U.S. Environmental Protection Agency's Environmental Equity Workgroup explained the disproportionate impacts of environmental hazards on people of color by noting that a "'person's activity' is the main determinant of how much environmental exposure she bears."[62] The workgroup also determined that "racially disparate environmental hazard exposure results from the fact that 'a large proportion of racial minorities reside in metropolitan areas' and 'are more likely to live near a commercial or uncontrolled waste site.'"[63]

Others suggest that the community preference alternative negates the justice implications of distributive inequities.[64] Under this analysis, distributive justice is defined "according to the degree to which the location of LULUs meets community preferences."[65] An undesirable land use in one community may not be undesirable in another.[66] Thus, an unequal distribution could, in theory, still be equitable if the distribution satisfied the

57 COLE & FOSTER, *supra* note 46, at 58.

58 *Id.*

59 *Id.*

60 *Id.*

61 *See* Christopher G. Boone, *An Assessment and Explanation of Environmental Inequity in Baltimore*, 23 URB. GEOGRAPHY 581, 589 (2002). This study of Baltimore in fact indicates that with respect to hazardous waste sites, white residents suffer disproportionate impacts as compared to black residents at the current time. *Id.* at 585. The authors suggest this is a function of the worker preference for living close to factories. *See id.* at 589.

62 COLE & FOSTER, *supra* note 46, at 58–59 (quoting 1 ENVTL. EQUITY WORKGROUP, U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES, WORKGROUP REPORT TO THE ADMINISTRATOR 13 (1992)).

63 *Id.* at 59 (quoting 1 ENVTL. EQUITY WORKGROUP, U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES, WORKGROUP REPORT TO THE ADMINISTRATOR 13–14 (1992)).

64 Blais, *supra* note 45, at 81–82.

65 Kaswan, *supra* note 49, at 1038.

66 *Id.*

host communities equally.[67] Under this analysis, "host communities make political and market-based determinations to permit" LULUs and that subsequently residents make "decisions either to remain in the community after the [LULU] was sited, or, in many cases, to migrate to a community playing host to" a LULU.[68]

There are certainly groups of people who are "concentrated in the most dangerous sectors of our workforce, agriculture and heavy industry."[69] Often, these groups can be characterized by low educational attainment and poor English language skills.[70] Likewise, urban areas are home to a disproportionately high percentage of African-American and Latino residents.[71] Critics of the community preference alternative point out that it "raises, rather than answers," important questions about the causes of the inequitable distributions of LULUs.[72] For instance, "*Why* are African Americans disproportionately segregated in cities and thus overexposed to a variety of pollutants? *Why* are farm-workers disproportionately poor and Latino?"[73]

Alice Kaswan argues that "the land use siting process and the dynamics of the housing market likely skew undesirable land uses toward poor and minority communities regardless of those communities' preferences."[74] Indeed, there is a substantial body of evidence indicating that residents of low-income and minority communities are relegated to distressed urban areas because "their residential choices are limited by their poverty and by various forms of discrimination." [75]

Another common explanation for the distribution of LULUs is that market forces, such as residential mobility, caused the disparity.[76] Commentators note that empirical studies have failed to establish that decision makers "intentionally discriminated against people of color or the poor" in the siting of LULUs.[77] Indeed, the methodologies of the empirical studies "have failed to compare the demographics of the neighborhoods at the time the [LULUs] were sited."[78] Instead of analyzing the inequities of the processes by which disamenities were sited, these studies have merely commented on the outcomes of mostly undisclosed siting processes.[79] Accordingly, researchers have left open the possibility that LULUs were not

67 *Id.*

68 Blais, *supra* note 45, at 81. Professor Blais largely discounts the possibility that public, and for that matter private, actors are deliberately siting LULUs in low-income neighborhoods, minority neighborhoods, or both. *Id.* ("[N]one of the empirical studies [are] able to demonstrate any . . . invidious discrimination [by political and private officials who make siting decisions.]").

69 COLE & FOSTER, *supra* note 46, at 59.

70 *See id.*

71 *Id.*

72 *Id.*

73 *Id.*

74 Kaswan, *supra* note 49, at 1038.

75 COLE & FOSTER, *supra* note 46, at 59.

76 Kaswan, *supra* note 49, at 1036–37.

77 Vicki Been, *What's Fairness Got to Do with It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1014, 1060–63 (1993).

78 COLE & FOSTER, *supra* note 46, at 60–61.

79 Been, *supra* note 77, at 1016.

disparately sited in low-income neighborhoods, but rather that the "housing and job markets" influenced low-income residents to "come to the nuisance" because the areas around the LULUs offered the most affordable housing and most easily attainable job options.[80]

Critics of the free market analysis point to "the historical and present reality of race discrimination in the housing market [that] inevitably affects individual preferences and mobility in the housing arena."[81] Critics also note a dearth of solid empirical evidence supporting the conclusion that low-income and minority individuals choose to "come to the nuisance."[82] Two of Professor Been's empirical studies contradict this hypothesis,[83] and her national study "provides little support for" the theory that market dynamics following a hazardous waste facility siting changed the social, racial, or economic characteristic of a neighborhood.[84] Other studies have had mixed results.[85]

While there are a few researchers who have found support for the free market alternative by noting declines in income and increases in the percentage of minorities after LULUs were sited, this evidence is not universally applicable and remains "inconclusive."[86] There are relatively few

80 *Id.* at 1016–18; COLE & FOSTER, *supra* note 46, at 60; *see also* Kaswan, *supra* note 49, at 1048–49 ("If at the time of an initial decision, an area had been unpopulated, or was white and affluent, then the siting decision itself was probably not politically unjust. But broader social injustices, like poverty and housing discrimination, could have led to a subsequent concentration of poor and minority residents, since they would be less able to flee undesired LULUs, or might be attracted to lower-valued housing in areas with LULUs." (citations omitted)).

81 COLE & FOSTER, *supra* note 46, at 61.

82 *Id.* at 60.

83 *Id.* at 207 n.17. In her article, *Coming to the Nuisance or Going to the Barrios?*, Professor Been found no evidence that communities became poorer or increased in minority population after the approval and construction of waste facilities. Vicki Been & Francis Gupta, *Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims*, 24 ECOLOGY L.Q. 1, 9, 27–29, 34 (1997). Similarly, in *Locally Undesirable Land Uses in Minority Neighborhoods*, Professor Been found that the southeastern waste sites studied by the United States General Accounting Office in 1983 were all sited in disproportionately African-American communities, and that these communities did not become poorer or increase in African-American population after the waste facilities were sited. Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1398–1400 (1994).

84 Been & Gupta, *supra* note 83, at 9, 27–29, 34; *see also* COLE & FOSTER, *supra* note 46, at 207 n.17.

85 COLE & FOSTER, *supra* note 46, at 207 n.17. Some have shown an increase in poor and minority residents after a siting and others have seen a decrease. *Id.* All of these other studies are of a small geographic area. *Id.*

86 *See* COLE & FOSTER, *supra* note 46, at 60, 207 n.17 (citing Been, *supra* note 83, at 1400–06) (finding that Houston waste sites studied in 1983 by Professor Bullard were originally sited in African-American communities, but the communities did not have disproportionately low incomes, and also finding, however, that the percentage of African-Americans rose and incomes fell after the solid waste facilities were sited); Douglas L. Anderton et al., *Hazardous Waste Facilities: "Environmental Equality" Issues in Metropolitan Areas*, 18 EVALUATION REV. 123 (1994) (finding no statistically significant racial disparity in the location of commercial hazardous waste facilities and finding evidence of economic decline in communities with commercial hazardous waste facilities, but no evidence of white flight); Thomas Lambert &

studies of postsiting housing market mobility, and those that have been conducted focused solely on hazardous waste facility siting (a rare event) and on a narrow geographic area.[87]

Whether the pattern of urban emergence is a function of distributive injustice or racial injustice[88] has profound implications for the future of cities and how current patterns might be remedied.[89] These arguments "echo[] constitutional equal protection jurisprudence, under which the disparate impact of a government action is not relevant unless it can be linked to an intent to discriminate" on the basis of race.[90] The U.S. Supreme Court has consistently held that the discriminatory racial impacts of an official government decision are insufficient to sustain an equal protection claim; there must also be proof of purposeful discrimination.[91] Absent purposeful

Christopher Boerner, *Environmental Inequity: Economic Causes, Economic Solutions*, 14 YALE J. ON REG. 195, 202 (1997); *see also* Kaswan, *supra* note 49, at 1038–39.

87 Kaswan, *supra* note 49, at 1037–38.

88 *Id.* at 1035 ("Some commentators have suggested that 'distributive injustice'—that is, evidence of disproportionate land use patterns—is not of regulatory concern unless it can be shown that the unequal [land-use] patterns were caused by identifiably discriminatory or biased processes.").

89 *Id.* at 1035–36.

90 *Id.* at 1054.

91 *See, e.g.*, Washington v. Davis, 426 U.S. 229, 239 (1976); *see also* McCleskey v. Kemp, 481 U.S. 279, 279–80 (1987) (upholding death penalty conviction despite evidence of statistically disproportionate capital punishment convictions due to lack of discriminatory purpose in plaintiff's immediate case). Though *McClesky* has been superceded by statute, *see* Cornelious v. Campbell, No. 1:06-cv-01500-TAG HC, 2009 WL 56006, at *5 (E.D. Cal. Jan. 7, 2009) (citing Antiterrorism and Effective Death Penalty Act of 1996, Pub. L. No. 104-132, 106 Stat. 1214), the original decision provides some important context here. The Court articulated three ways through which purposeful discrimination can be proved in its landmark decision *Village of Arlington Heights v. Metropolitan Housing Development Corp.* (*Arlington Heights*), 429 U.S. 252, 266–68 (1977). First, a law's impact may be so plainly discriminatory that no nondiscriminatory justification would be possible. *Id.* at 266. In *Yick Wo v. Hopkins*, 118 U.S. 356 (1886), the plaintiff challenged a city ordinance requiring laundries to be located in brick or stone buildings unless a waiver was obtained, *id.* at 356–57. Upon producing evidence that over 200 waiver applications were denied to persons of Chinese ancestry whereas all waiver applications filed by non-Chinese persons were approved, the plaintiff convinced the Court of the city's discriminatory intent. *See id.* at 359, 374. Similarly, in *Gomillion v. Lightfoot*, 364 U.S. 339 (1960), the plaintiff challenged a government's redrawing of municipal boundaries that excluded virtually all of the city's black voters while excluding not a single white voter, *id.* at 340–41. The Court was once again persuaded that legislators had acted for no other purpose than racial discrimination. *Id.* at 347–48. However, cases such as *Yick Wo* and *Gomillion* are quite rare. *Arlington Heights*, 429 U.S. at 266 ("Absent a [statistical] pattern as stark as that in *Gomillion* or *Yick Wo*, impact alone is not determinative, and the Court must look to other evidence." (citation omitted)). Second, the context and sequence of events leading up to the challenged policy can indicate purposeful discrimination. *Id.* at 267. For example, in *Guinn v. United States*, 238 U.S. 347 (1915), the Court invalidated a state law requiring a literacy test for voting that effectively exempted white citizens through a grandfather clause for descendants of those who were eligible to vote in 1866, *id.* at 347–48, 357. Though the law was facially neutral, its historical context made the legislature's discriminatory purpose perfectly clear. *See id.* at 357–58. The Court in *Griffin v. County School Board of Prince Edward County*, 377 U.S. 218 (1964), invalidated a policy that closed public schools in response to desegregation orders, effectively forcing residents to pay for children to attend segregated private schools, *id.* at 219. The facially neutral law's discriminatory purpose was once again ascertained by looking at its

discrimination that can be proved by inexplicably disproportionate effects, obvious contextual circumstances, or barefaced statements of legislators, the Equal Protection Clause is not suited to overturn a facially neutral law merely because it has a discriminatory racial impact.[92]

By accepting that the market may play some role in the current distribution of inequities, Luke Cole and Sheila Foster clarify that the environmental justice critique cannot therefore meet the judicially actionable standard, which depends on a single bad actor and overt racism.[93] They argue that for the purposes of the environmental justice movement, notions of racism need not be confined to the judicial standard, as the struggle for environmental justice is primarily a political and economic struggle.[94] However, even in the political realm, any struggle for racial equality, and any charge of racial bias, "draws its contemporary moral strength by being clearly identified with the history of the structural oppression of African-Americans and other people of color in this society."[95] Every step away from the understanding of the role of race as compared to the role of market forces is a step further from the moral and political will to change current distributional patterns. As Cole and Foster state,

> The studies that chart the disproportionate distribution of environmental hazards have been a wake up call for those in this country who care about social justice. However, in a sense, the studies are just a beginning . . . . [F]ocusing on distributional results alone obscures the social structure and institutional context in which environmental decisions are made. Absent a deeper focus on the processes that lead to racially disparate outcomes, the studies provide only an incomplete understanding of environmental racism.[96]

historical context. *See id.* at 220–25. Third, the legislative or administrative history of a law can reveal explicit discriminatory purposes. *Arlington Heights*, 429 U.S. at 268. By examining statements made by lawmakers in the transcripts of its meetings or reports, courts are able to ascertain publicly stated motivations. *See id.* However, the real-world usefulness of this method is most limited because it would take an unusually shameless legislator to openly state a racially discriminatory motive. *See* Shira J. Schlaff, Comment, *Using An* Eruv *to Untangle the Boundaries of the Supreme Court's Religion-Clause Jurisprudence*, 5 U. PA. J. CONST. L. 831, 857 (2003) ("Despite blatantly discriminatory comments at council meetings, the District Court held [in *Tenafly Eruv Ass'n, Inc. v. Borough of Tenafly*, 155 F. Supp. 2d 142, 152–58 (D.N.J. 2001),] that the law at issue was neutral because council-members did not explicitly state discriminatory reasons . . . .").

92 *Arlington Heights*, 429 U.S. at 253, 266–68. Even if a plaintiff is able to prove the existence of purposeful discrimination through one of the three methods mentioned in *Arlington Heights*, the law is not immediately invalidated. *Id.* at 270 n.21. Rather, the burden would then shift to the government to prove that it would have taken the same action even if it did not have discriminatory motivation. *Id.* Thus, the government is given an opportunity to articulate a nondiscriminatory rationale for its law. *Id.* This burden shifting poses yet another obstacle for potential plaintiffs in a judicial system that appears extremely hesitant to overturn facially neutral laws for violating the Equal Protection Clause. *See id.*

93 *See* COLE & FOSTER, *supra* note 46, at 63–65.

94 *Id.* at 65.

95 *See* Gerald Torres, *Introduction: Understanding Environmental Racism*, 63 U. COLO. L. REV. 839, 839 (1992).

96 COLE & FOSTER, *supra* note 46, at 79.

The lack of empirical studies untangling the role of race from the role of the market also carries implications for the debate over remedial action.[97] Treating current distributional patterns as a mystery or as part of the chaotic interplay of race and the market has profound implications for the legal and political foundations for changing those patterns. Absent a lens through which to examine the relationship between race and the market, and a method for examining the pattern of environmental distributions, it has been difficult to approach this mystery.

Addressing cities as emergent systems provides a theoretical and investigatory framework for better understanding the underlying processes at work in cities and thus the roles of race and of the market in the distribution of land uses in cities in the twentieth century. If we are serious about managing cities as emergent systems, we must study cities as a biologist would study a living system.[98] In order to effectively manage an emergent system, we must identify the potential drivers or catalysts in the emergent system and we must make some attempt to understand how these catalysts interact.[99] Studying cities as emergent systems should provide a sharper understanding of the role of various potential catalysts. Only then can we identify which catalysts need to be modified or managed, and how to manage them, in order to achieve the emergent outcomes we want to see in our cities.

With respect to environmental justice, when we study cities as emergent systems, we must attempt to understand what role racism played in creating the current distributional outcomes, independent of postsiting market dynamics. If race seemed to play a role independent of postsiting real estate valuations, then race is a catalyst in the land-use decision making and not just at a more general societal level. Such an outcome would suggest that race is or was a critical catalyst for the current emergent city. Such a discovery would provide the "contemporary moral strength," and thereby the political justification, to seek systemic modification to eliminate racism or its resonance.[100] If race and postsiting market decisions seem inextricably linked, then racism might be less a critical catalyst in its own right, and the emphasis on system modification might be on economic power and social mobility.

To date, there have been few, if any, time-series studies on the siting of environmental disamenities.[101] While there is a great deal of speculation about the interplay between race and the market, there have been no studies that look closely at the demographics of neighborhoods at the time that

97 *Id.* at 60; *see also* Lawrence J. Straw, Jr., *Environmental Justice: Racial Gerrymandering for Environmental Siting Decisions*, 14 VA. ENVTL. L.J. 665, 671, 679–80 (1995) (critiquing environmental justice advocates who argue that disparate impacts should be addressed even if unaccompanied by discriminatory intent).

98 *See* JACOBS, *supra* note 22, at 439–40.

99 *See* JOHNSON, *supra* note 22, at 108–09.

100 Torres, *supra* note 95, at 839 ("The term racism draws its contemporary moral strength by being clearly identified with the history of the structural oppression of African-Americans and other people of color in this society.").

101 Kaswan, *supra* note 49, at 1090.

disamenities are sited.[102] For this project, we have designed and field tested a method for evaluating the distribution of disamenities at the time of the siting decisions in an effort to establish whether race or postsiting market dynamics played a larger role in current distributional patterns of environmental disamenities.

IV. UNDERSTANDING THE PATTERN: A CASE STUDY IN EMERGENCE

Identifying whether race served as a catalyst in one emergent urban system requires a close study of the process of locating disamenities over time. Our first goal was to determine whether it is possible to study the distributional process at all. Our second goal was to determine whether race seemed to serve as a catalyst in the system independent of the market dynamics.

In order to isolate the role of race, as compared to market forces, as a catalyst, our team chose to study the zoning process in a single city—Baltimore, Maryland.[103] Local zoning ordinances are the chief means by which permitted land uses (including disamenities) are established and regulated in cities throughout the country.[104] Zoning ordinances establish the uses that are permitted as-of-right in certain districts, as well as the uses that require the discretionary approval of an adjudicative body, such as a board of zoning appeals.[105] Prior to New York City's adoption of the first zoning ordinance in 1916, incompatible land uses were not resolved through democratic processes; instead, incompatible land uses were settled primarily through nuisance-based litigation.[106] Comprehensive zoning thus developed as a proactive—rather than reactive—response to the problems

102 *Id.*; *see also* COLE & FOSTER, *supra* note 46, at 79.

103 Dr. Papenfuse and the staff at the Maryland State Archives are now managing the original zoning records from the City of Baltimore, and our success in accessing these records and analyzing them is based on their fine work. As noted, we did not know if an analysis such as ours was even possible. However, thanks to their good work and the work of the Baltimore city staff in preserving these records, such research is indeed possible.

104 Kaswan, *supra* note 49, at 1106. There are a variety of zoning techniques that local governments employ to regulate and either encourage or discourage certain land uses. These techniques include historic districts, overlay districts, demolition delay ordinances, conservation districts, tree preservation ordinances, religious land-use exemptions, building moratoria, development impact fees, and inclusionary housing ordinances. *See generally* JULIAN CONRAD JUERGENSMEYER & THOMAS E. ROBERTS, LAND USE PLANNING AND DEVELOPMENT REGULATION LAW 362–68 (2d ed. 2007) (discussing inclusionary housing); *id.* at 495–98 (discussing moratoria); *id.* at 508–40 (discussing impact fees); *id.* at 699–708 (discussing the Religious Land Use and Institutionalized Persons Act of 2000, 42 U.S.C. §§ 1988, 2000bb-2 to -3, 2000cc to -5 (2006)); *id.* at 810–814 (discussing historic preservation at the local level); *id.* at 862–64 (discussing conservation easements). Houston, Texas is the only major American city without a comprehensive zoning ordinance. Chistopher Berry, *Land Use Regulation and Residential Segregation: Does Zoning Matter?*, 3 AM. L. & ECON. REV. 251, 251 (2001).

105 *See, e.g.*, N.Y. City Dep't of City Planning, NYC Zoning History, http://www.nyc.gov/html/dcp/html/zone/zonehis.shtml#how (last visited Apr. 18, 2010) (providing general information on the administration of New York City zoning regulations).

106 *See id.*

that arise from incompatible land uses.[107] In particular, zoning has long sought to separate noxious industrial uses from residential areas by restricting the industrial uses to specific zoning districts.[108] Accordingly, an uneven, concentrated distribution of LULUs should be expected in most cities because zoning generally aims to prevent LULUs from being spread evenly throughout residential areas.[109]

As far back as Baltimore's incorporation as a city in 1796, the Maryland state legislature, called the General Assembly, granted the Mayor and the City Council "full power and authority to enact and pass all laws and ordinances necessary to . . . prevent and remove nuisances."[110] Beginning in 1908, the Mayor and City Council codified their general power to regulate nuisances into an ordinance that looked more like a general zoning program and regulated a large number of potential nuisances.[111] The 1908 ordinance required that a certain class of buildings be "limited as to location."[112] The ordinance gave the Mayor "the power to approve or disapprove the location of buildings" that could potentially be objectionable to neighbors.[113] This class of buildings was described as "used for the carrying on of business, injurious to the residents of any neighborhood in the city."[114]

Mayor James H. Preston was one of the first voices in Baltimore to advocate for a comprehensive zoning scheme modeled after New York City.[115] In 1916, Mayor Preston implored the Baltimore City Council to enact such legislation, noting that "[i]t is manifestly injurious to a purely residential neighborhood to have a factory, store, or other . . . business placed in a section which . . . should be occupied solely by residences."[116] Not only did Mayor Preston "champion[] zoning as a means of stopping commercial encroachment in residential neighborhoods," but he also promoted zoning "as a method of preventing conversion of houses into tenements or apartments, and as a technique for promot[ing] cottage development to the exclusion of block rows."[117]

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107 *See id.* ("The concept of enacting a set of laws to govern land use was revolutionary but the time had come for the city to regulate its surging physical growth.").

108 Kaswan, *supra* note 49, at 1106.

109 *Id.*

110 Act of Dec. 31, 1796, ch. 68, 1796 Md. Laws 1056, 1058, *available at* http://www.msa.md.gov/megafile/msa/speccol/sc4800/sc4872/003181/html/m3181-1056.html (establishing the City of Baltimore); Mayor & City Council of Balt. v. Marriott, 9 Md. 160, 65 Am. Dec. 326 (1856).

111 Balt., Md., Ordinance 155 (June 19, 1908); *see also* Smith v. Standard Oil Co. of N.J., 130 A. 181, 181 (Md. 1929).

112 *Smith*, 130 A. at 181 (citing Balt., Md., Ordinance 858 (Apr. 15, 1923), which amended Balt., Md., Ordinance 155 § 47, para. 12 (June 19, 1908)).

113 Garrett Power, *The Unwisdom of Allowing City Growth to Work Out Its Own Destiny*, 47 MD. L. REV. 626, 628 (1988) (citing Balt., Md., Ordinance 155 (June 19, 1908)). In 1923, the City Council expanded the Mayor's authority to include garages, laundries, stores, and warehouses. Balt., Md., Ordinance 858 (Apr. 15, 1923); *see also* Power, *supra*, at 633.

114 *See Smith*, 130 A. at 181.

115 Power, *supra* note 113, at 627.

116 *Id.* (quoting *Some Legislation, Akin to New York's "Zone Law," Is Needed to Protect Valuable Property from Invasions that Are Ruinous to Property Values*, BALT. MUN. J., Oct. 27, 1916, at 4).

117 *Id.* at 644.

In 1921, Mayor Wiling F. Broening established a Zoning Commission that was responsible for "preparing a comprehensive zoning plan for Baltimore and submitting it to the City Council in the form of an ordinance."[118] In accordance with the National Advisory Committee on Zoning's suggestion that "zoning regulations . . . be adapted intimately to each part of [a] municipality,"[119] Baltimore's Zoning Commission drafted "detailed maps which divided the city into districts by the use of land and the use, height, and area of buildings."[120] As Garret Power explains,

> The Use District Map divided the city into a hierarchy of Residence, First Commercial, Second Commercial, and Industrial Zones. In Residence Districts only dwellings were permitted; in the First Commercial Districts dwellings along with retail and wholesale business and light manufacturing were allowed; in the Second Commercial Districts business and manufacturing, except certain obnoxious uses, also were permitted; and in the Industrial Districts all uses were allowed.[121]

The Zoning Commission categorized downtown's central business district as a First Commercial District, thereby assuring future retail and office uses.[122] Smatterings of other retail areas located at busy intersections were also categorized as First Commercial Districts.[123] The areas surrounding downtown's central business district were categorized as Second Commercial Districts in anticipation of some heavier manufacturing uses.[124] In March 1923, the Zoning Commission proposed the aforementioned zoning regime to the City Council.[125] On May 19, 1923, the Council approved the proposal and Mayor Broening signed it into law, thereby establishing Baltimore's first zoning ordinance.[126]

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118 *Id.* at 630 (citing Balt., Md., Ordinance 615 (July 15, 1921)).

119 *Id.* at 631 (citing U.S. DEP'T OF COMMERCE, THE PREPARATION OF ZONING ORDINANCES: A GUIDE FOR MUNICIPAL OFFICIALS AND OTHERS IN THE ARRANGEMENT OF PROVISIONS IN ZONING REGULATIONS 5 (1931)).

120 *See id.*

121 *Id.*

122 *Id.*

123 *Id.*

124 *Id.*

125 *Id.*

126 *Id.* at 633; *see* Balt., Md., Ordinance 922 (May 19, 1923); Balt., Md., Ordinance 154 (Apr. 16, 1924) (amending Ordinance 922 to change the locations of existing use districts). The original code was struck down twice for technical reasons. Goldman v. Crowther, 128 A. 50, 60 (Md. 1925) (invalidating Ordinance 922 on the basis that it deprived property owners of their rights under the state constitution without adequate justification); Tighe v. Osborne, 131 A. 801, 808 (Md. 1926) (invalidating Balt., Md., Ordinance 334 (Feb. 9, 1925)). After the invalidation of Ordinance 334, Baltimore finally got it right with the passage of Ordinance 522, Balt., Md., Ordinance 522 (Dec. 14, 1925), in December of 1925. Tighe v. Osborne, 133 A. 465, 470 (Md. 1926). This ordinance cured the problems of the previous law by excluding language allowing the zoning commissioner to make decisions with regard to the "general welfare," and instead, properly limited the commissioner's power to "prohibiting structures or uses of them which would menace the public security, health or morals." *See id.* at 467 (upholding Ordinance 522 because by properly limiting the zoning commissioner to the "proper objects of police power," it did not constitute an unlawful delegation of power by the City of Baltimore).

The ordinance in its final form provided for appeals to the Board of Zoning Appeals and then to the Baltimore City Court.[127] In 1926, the city finally set in motion its planning process to set the land-use zones and processes for land-use decision making, and the city finally completed the process in 1931.[128]

The new zoning ordinance created a Board of Zoning Appeals (BZA).[129] This new BZA, which consisted of seven mayoral-appointed members, was given the authority to either approve or disapprove special exceptions to the zoning ordinance.[130] In deciding whether to grant a special-use permit, the zoning board in Baltimore must find the following:

> (1) the establishment, location, construction, maintenance and operation of the conditional use will not be detrimental to or endanger the public health, security, general welfare, or morals;
>
> (2) the use is not in any way precluded by any other law . . . ;
>
> (3) the authorization is not otherwise in any way contrary to the public interest; and
>
> (4) the authorization is in harmony with the purpose and intent of this article.[131]

In Baltimore, the special-use provision addressed the fact that "[c]ertain uses exist . . . that, because of their unique characteristics, cannot properly be classified in any particular district without consideration, in each case, of the impact of those uses on neighboring land and of the public need for the particular use at the particular location."[132] The purpose of the conditional-use provisions are also linked by the Zoning Code to the goal of maintaining district uniformity.[133]

In making its decision, the board must consider not only the nature of the proposed site itself, but also "the nature of the surrounding area and the extent to which the proposed use might impair its present and future development"[134] and the "proximity of dwellings, churches, schools, public structures, and other places of public gathering."[135]

In short, special uses in Baltimore are reviewed on a case-by-case basis with a special emphasis on the impact on the surrounding neighborhood and

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Note that the *Goldman* case came just before the Supreme Court upheld local zoning in *Euclid v. Ambler Realty Co.*, 272 U.S. 305, 365 (1926), and that *Tighe* was post-*Euclid*. Thanks to Garret Power for pointing this out.

127 *See* Balt., Md., Ordinance 922 (May 19, 1923).

128 *See* Balt., Md., Ordinance 1247 (Mar. 30, 1931) (enacting Baltimore's initial comprehensive zoning ordinance).

129 Power, *supra* note 113, at 633.

130 *Id.* The board also had the authority to grant exceptions where the zoning code created a hardship for a land owner. *Id.*

131 BALT., MD., ZONING CODE § 14-204 (2009).

132 *Id.* § 14-101(b).

133 *Id.* § 14-101(a).

134 *Id.* § 14-205(a)(1), (3).

135 *Id.* § 14-205(a)(4).

on maintaining uniformity within districts. Such indefinite and subjective terms provide wide-ranging discretion to the adjudicative boards such as the board in Baltimore.[136] The discretion also provides ample opportunity for powerful private interests to overwhelm indigent residents before the boards.[137]

The development of Baltimore's Zoning Code is divided into two major eras: 1931 to 1971, and 1971 to the present. As the 1931 to 1971 code proclaims, "[A]ll buildings and all uses of land shall be permitted in any use district, except . . . [those that] are excluded from such use district."[138] If an appellant desired an excluded use, she had to seek an authorizing ordinance from the Mayor and City Council.[139] Though not specifically called special uses, the early code effectively functioned as a list of conditional or special uses.[140] During this era, the BZA was relegated to very minor appeals including appeals for nonconforming uses, temporary uses, and minor district boundary exceptions.[141] Conversely, the code from 1971 to the present is more restrictive because it specifies those uses that are permitted by right along with uses that must be approved.[142] The presumption is that a use is not allowed unless specified.[143] If an appellant desires a use that requires approval, she must seek approval from either the Mayor and City Council or from the BZA.[144] The BZA's role has been significantly expanded in the new code.[145] These special-use appeals are all clearly defined for each use district in the new code.[146]

The post-1971 list of conditional uses includes forty-seven different categories of uses, including thirty-one that must be approved by the BZA[147]

136 *See generally* 3 ARDEN H. RATHKOPF ET AL., RATHKOPF'S THE LAW OF ZONING AND PLANNING § 61:1–:50, at 61-2 to 61-138 (4th ed. 2009) (describing the history and contours of the site-specific discretionary review of proposed uses in the context of applicable zoning regulations).

137 *See id.*

138 Balt., Md., Ordinance 1247 § 3 (Mar. 30, 1931).

139 *Id.* § 4.

140 *See id.* § 1.

141 *Id.*

142 BALT., MD., ZONING CODE §§ 3-101 to -103 (2009).

143 *Id.* § 3-106.

144 *Id.* § 14-102.

145 *See id.* §§ 2-109 to -111 (establishing the BZA's jurisdiction and authority).

146 *See, e.g.*, *id.* § 4-203.

147 These uses include 1) alcoholic beverages and taverns (live entertainment and dancing), 2) after-hours establishments, 3) arsenals, 4) atomic reactors, 5) dry cleaners and laundries with more than four employees, 6) explosives, 7) firearm sales, 8) garages for repairs and service, 9) manufacturing and storage of combustible or toxic gases, 10) gasoline service stations, 11) sewerage pumping stations, 12) water filtration plants, 13) heliports, 14) junk or scrap storage and yards, 15) mining, gravel, sand, or other raw materials, 16) auto accessory stores, including repair and installation, 17) automotive testing grounds, 18) car washes, 19) petroleum distribution, pumping, or valve stations, 20) poultry and rabbit killing establishments, 21) public utilities such as antenna towers, 22) electric distribution centers, 23) overhead electric transmission lines, 24) repeater, transformer, or pumping stations, 25) radioactive waste handling, 26) recycling collection stations, 27) recyclable materials recovery facilities with outdoor storage, 28) rock crushing, 29) stables for horses, 30) tire and tire products, but with no tires or tire products within 200 feet of a residential district, and 31) waste disposal for landfill and land reclamation. *See id.* §§ 4.0-1 to 7.3-2; *id.* at 427–77 tbl. (containing a table of zoning uses).

and twenty-two for which a city council ordinance is required.[148] Of those forty-seven different conditional uses, our team chose to study those that have clear environmental impacts: incinerators, solid waste management or recycling (including scrap yards and poultry killing or dressing), hazardous waste handling, penal and correctional institutions, parking, automobile repair, and large scale residential projects (which might have significant traffic impacts). While the structure and development of the two codes are notably different, they do not create a fundamental disparity that makes meaningful comparison impossible.[149]

Our team set out to locate the decisional record for "special use" permits for each decade between 1930 and 2000.[150] Finding those records

148 These include 1) adult entertainment and bookstores, 2) community correction centers, 3) drive-in dry cleaning facilities, 4) hazardous material handling and storage, 5) commercial or municipal incinerators, 6) peep show establishments, 7) penal and correctional institutions, 8) racetracks, 9) drive-in theaters, 10) commercial or municipal incinerators, 11) indoor recyclable materials recovery facilities, 12) drive-in drug stores, 13) multifamily homes containing 100 or more units, 14) drive-in restaurants, 15) homes for nonbedridden alcoholics or homeless people, 16) garages or open areas for four or more automobiles, 17) parole or probation field offices, 18) pawnshops, 19) photographic printing and developing, 20) planned unit developments, 21) bus passenger shelters, and 22) service and housing centers. *See id.* §§ 4.0-1 to 7.3-2; *id.* at 427–77 tbl. (containing a table of zoning uses).

149 In fact, it is instructive to compare the conditional approval process for the seven targeted disamenity types across the two codes. First, just as ammonia manufacture is listed as a conditional use in the earlier code, so too is "Gases, combustible or toxic—manufacturing and storage" in the later code. *Compare* Balt., Md., Ordinance 1247 (Mar. 30, 1931), *with* Balt., Md., Ordinance 1051 § 7.2-1(c)(6) (Apr. 20, 1971). Second, though collection centers were only added to the zoning code in the 1990s, solid waste and recyclable materials facilities like scrap yards were listed as conditional uses in the 1931–1971 code for industrial districts. *See* BALT., MD., ZONING CODE § 7-407 (2009); Balt., Md., Ordinance 1247 § 1 (Mar. 30, 1931). For the period 1971 to present, the code allowed conditional approval of scrap yards in Heavy Industrial (M-3) areas, with the presumption that they are not allowed in other districts. BALT., MD., ZONING CODE § 7.407 (2009); Balt., Md., Ordinance 1051 §§ 7.3, 7.3-1(c)(5) (Apr. 20, 1971). Since recycling collection centers are a modern phenomenon, *see, e.g.*, Liz Bowie, *Baltimore Launches Quiet Revolution in Recycling but City Needs to Spread the News*, BALT. SUN, Nov. 29, 1991, http://articles.baltimoresun.com/1991-11-29/news/1991333020_1_recycling-program-curbside-collection-baltimore (last visited Apr. 18, 2010), there is no basis for comparison across the two codes. Third, penal and correctional institutions have consistently required approval or were restricted in Residential Districts. *Compare* Balt., Md., Ordinance 1247 § 1, para. 8 (Mar. 30, 1931), *with* BALT., MD., ZONING CODE § 4-204 (2009). During the period 1971 to the present, the code provided for the conditional approval of community correction centers in Industrial Districts. *Id.* §§ 7-308, -408(4). Fourth, garages, auto repair and open area parking have consistently required approval in Residential Districts, and since 1971 the zoning code has required conditional approval for the parking of four or more vehicles in every district except Community Commercial (B-3) and Central Commercial (B-5) Districts. *Id.* § 7.2-1. The 1971 code provides the same treatment for parking garages, except that parking garages are permitted by right in industrial districts. Balt., Md., Ordinance 1247 (Mar. 30, 1931). Finally, the 1931 code did not have a process for Planned Unit Developments. *See generally* Balt., Md., Ordinance 1247 § 1 (Mar. 30, 1931) (regulating "residential use districts" but not distinguishing between different scales of residential use development). Thus, housing developments of greater than 100 units did not have to undergo any particular process until the 1971 code came into effect; now these developments require a conditional use permit. Balt., Md., Ordinance 1051 § 4.2-1(d)(3) (Apr. 20, 1971).

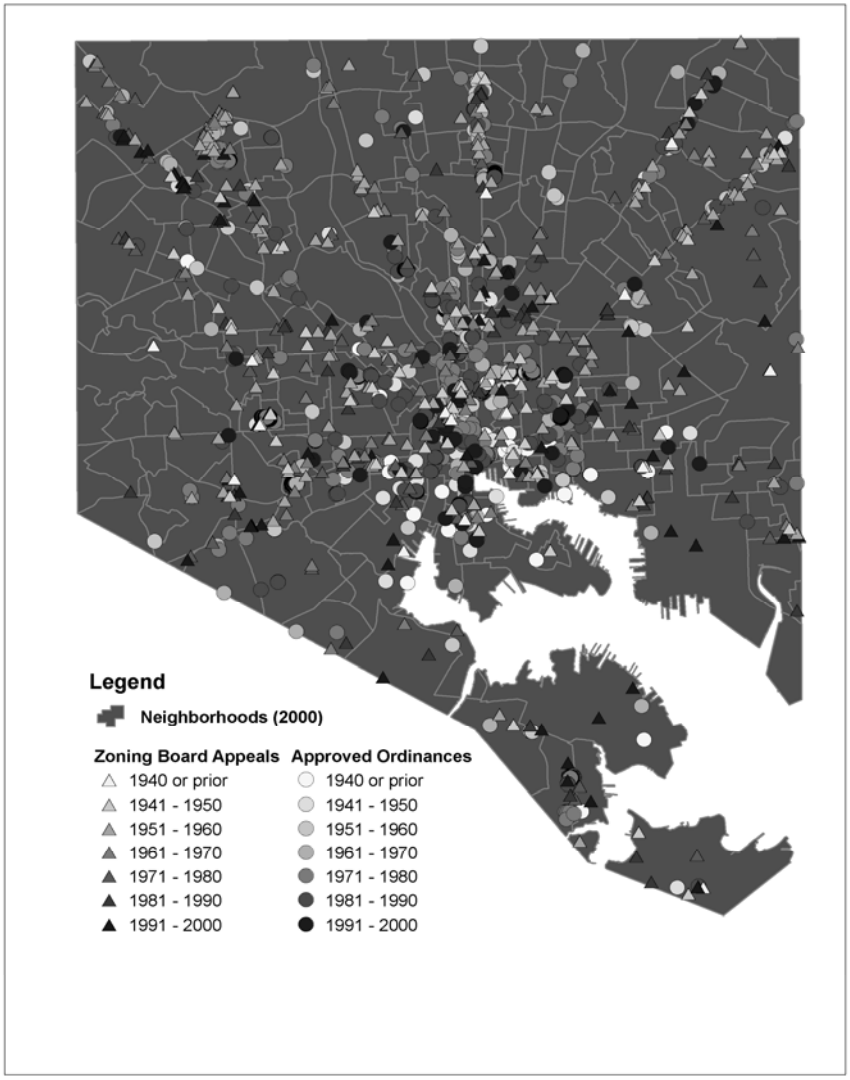
150 Henceforth, we will use the term "special use" to describe these permits.

would allow us to overlay the decisional outcomes with the demographic patterns for each decade. This analysis isolates the decision within the context of a single decade and allows our team to identify the intersection between race and the procedural outcomes at the time of the decision and not just at the present time. Such analysis separates out the impact of race from postsiting market dynamics. Furthermore, we hoped that understanding the decision-making process and reading case files might provide some clues as to the role of race in the decision-making itself.

Our team found records in the Legislative Reference Library (for City Council decisions) and the City Archives (for BZA decisions) of over 10,000 special-use permits between the period 1930 and 2000 and pulled for closer analysis just those from our list of environmental impact special-use permits.[151] We then created a data set of over 1000 records by address, type of disamenity, and record number. We then located all of the records in a spatial database of Baltimore (see Figure 1). Through the Baltimore Ecosystem Study, our spatial map is linked to demographic data on race and income for each decade from 1930 to the present.

151 The city council decisions are indexed by year in a summary of city council decisions. These decisional records and the indexes are in the Legislative Reference Library in Baltimore, Maryland. The BZA decisions for 1931–1971 are now housed at the Maryland State Archives and are organized chronologically by date. The BZA decisions for 1971 to the present are at the BZA in Baltimore and are organized chronologically by case file number. Dr. Papenfuse and the staff at the Maryland State Archives are now managing the original zoning records from the City of Baltimore, and our success in accessing these records and analyzing them is based on their fine work.

Figure 1: Special-Use Permits in Baltimore, 1940 to 2000[152]



While there is no guarantee that zoning variance records are available for every American city,[153] our success does suggest that it is possible in some cities to isolate the placement of environmental disamenities to a specific time and demographic context, and thus to identify whether there is a correlation between race and the location of disamenities at the time of the siting and also to analyze the correlation between income and the location of disamenities. In other words, such a dataset can help answer for a particular

152 Prepared based on extensive interviews with Dr. Jarlath O'Neil-Dunne, Geospatial Analyst, University of Vermont Spatial Analysis Laboratory.

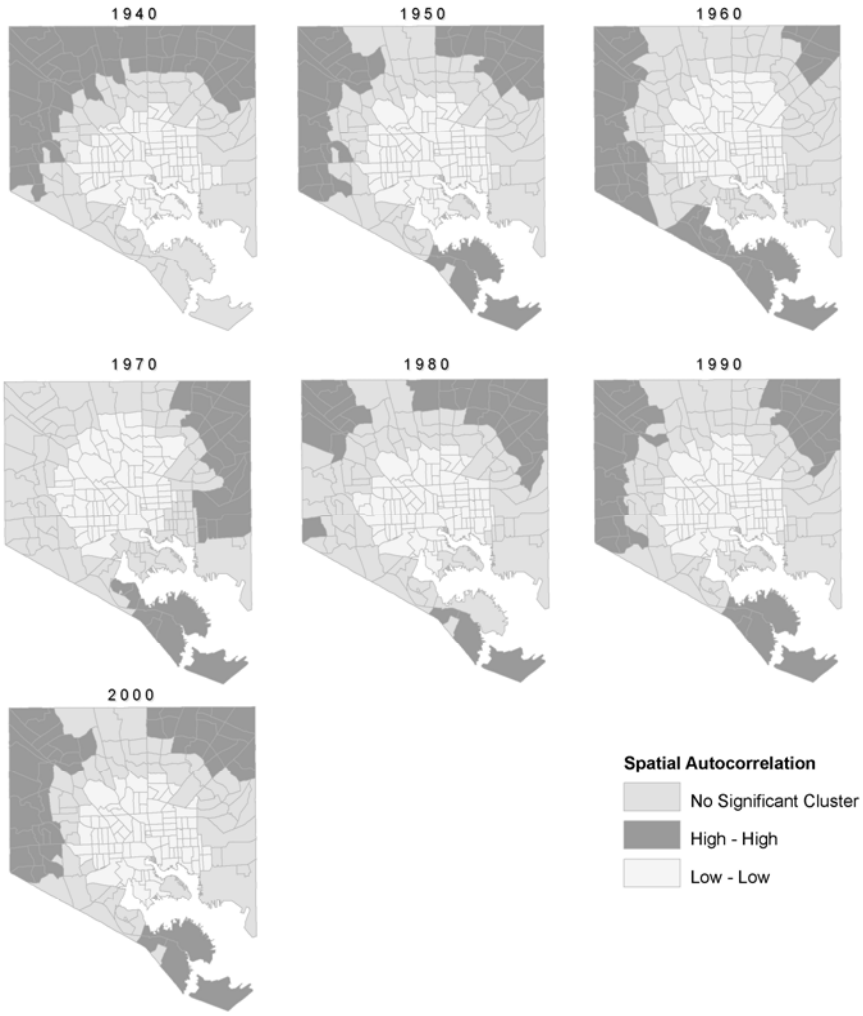
153 Telephone Interview with Dr. Edward Papenfuse, Md. State Archivist, in Balt., Md. (Jan. 5, 2009).

city whether there were correlations between race and siting and whether there was evidence of a postsiting market dynamic in the current distribution of disamenities.

Our team performed a statistical analysis for the intersection between race, income, and the location of disamenities.[154] Specifically, for each decade, the team looked at neighborhoods that were close to the zoning special-use permits approved for that decade (the disamenities), surrounded by other neighborhoods close to special-use permits. These neighborhoods can be described as "low distance" zones on the map because these neighborhoods are close to the disamenities for that decade. The team then isolated those neighborhoods that are farthest from zoning variance approvals surrounded by other neighborhoods that are a long way from those disamenities. We call these neighborhoods "high distance" zones, because these neighborhoods are a long distance from the disamenities for that decade. Some neighborhoods fall into a middle category and might be called neutral neighborhoods. In our maps, the low-distance (high-impact) zones are lighter and the high-distance (low-impact) zones are darker (see Figure 2).

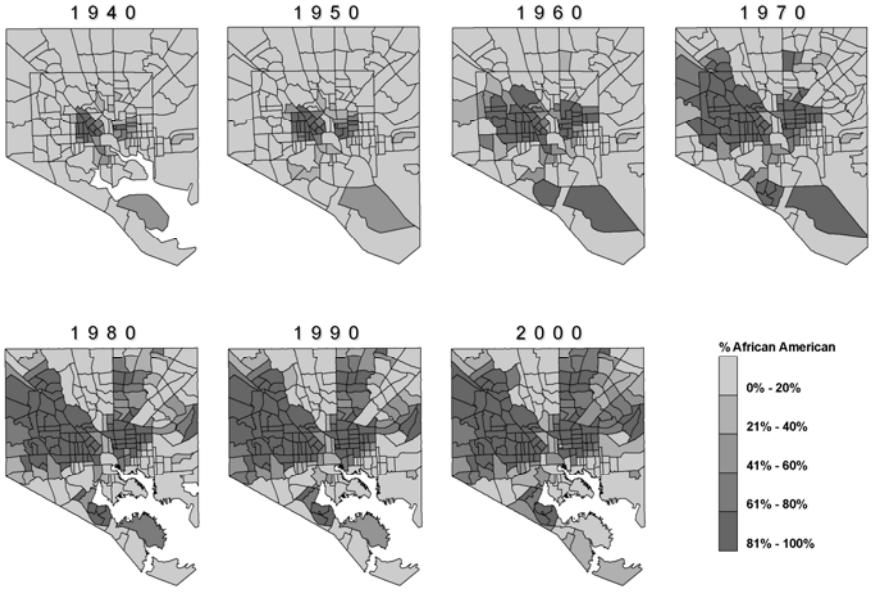
154 To take into account spatial spillovers, David Seekel and Austin Troy of the University of Vermont calculated equity as the average distance between a census block group centroid and approved disamenities from the previous decade. *See generally* E. Talen & L. Anselin, *Assessing Spatial Equity: An Evaluation of Measures of Accessibility to Public Playgrounds*, 30 ENV'T & PLANNING 595, 599 (1998) (showing another application of this distance calculation). They used Moran's I and local indicators of spatial association (LISA) to assess spatial autocorrelation. *See generally* Luc Anselin, *Local Indicators of Spatial Association–LISA*, 27 GEOGRAPHICAL ANALYSIS 93, 93, 115 (1995) (utilizing the LISA statistics to show both data "hot spots" and outliers). They used first order contiguity spatial weights matrices. Statistical significance was assessed with a permutation test ($n = 999$). They used Moran scatterplots to visually inspect for local instabilities in Moran's I. *See generally* Luc Anselin, *The Moran Scatterplot as an ESDA Tool to Assess Local Instability in Spatial Association*, *in* SPATIAL ANALYTICAL PERSPECTIVES ON GIS 111, 115–17 (Manfred Fischer et al. eds., 1996) (describing the Moran scatterplot technique and its application to local instability). To examine the relationship between the equity measure, race, and income they used the product moment correlation coefficient. The equity statistic was $\log_e$ transformed prior to analysis. Proportions were arcsine square root transformed to stabilize variances. Because the average distance to disamenity is by design nonrandom over space, they adjusted the effective degrees of freedom according to Peter Clifford et al., *Assessing the Significance of the Correlation Between Two Spatial Processes*, 45 BIOMETRICS 123, 124 (1989). Statistical analyses were completed in GeoDa, "a free software program intended to serve as a user-friendly and graphical introduction to spatial analysis for non-geographic information systems . . . specialists." *See generally* Luc Anselin et al., *GeoDa: An Introduction to Spatial Data Analysis*, 38 GEOGRAPHICAL ANALYSIS 5, 5 (2006) (explaining the GeoDa program and its uses and the Spatial Analysis in Macro-ecology, or SAM, software); Thiago Fernando L.V.B. Rangel et al., *Towards an Integrated Computational Tool for Spatial Analysis in Macroecology and Biogeography*, 15 GLOBAL ECOLOGY & BIOGEOGRAPHY 321 (2006) (describing SAM, the Spatial Analysis in Macro-ecology software program, and its uses).

Figure 2: Disamenity Impact Zones 1940 to 2000



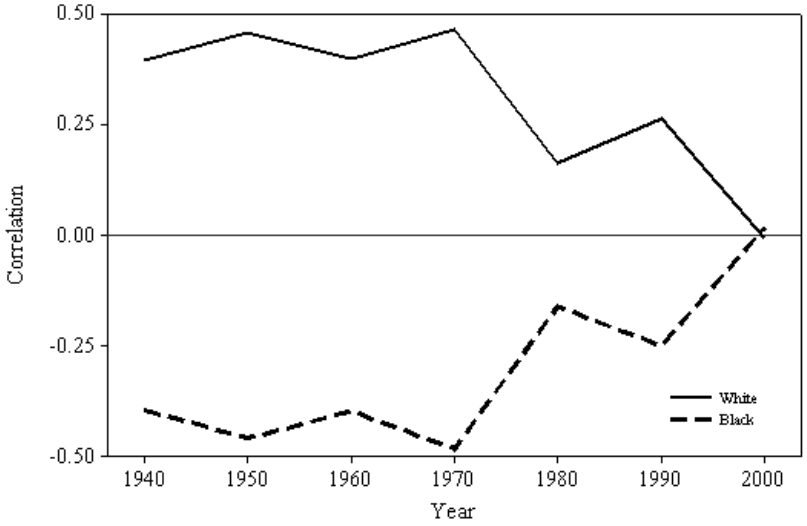
The team then analyzed the race and income data for the low-distance (high-impact) neighborhoods and for the high-distance (low-impact) neighborhoods for each decade (see Figure 3 below showing percentage of African-American residents for 1940 to 2000).

Figure 3: Percentage of African-American Residents by Neighborhood in 1940 to 2000



Our analysis of the data shows that for each decade between 1940 and 2000, there was a correlation between race and the distance to disamenities. Specifically, the higher the percentage of African-American residents, the closer to disamenities, and the higher the percentage of white residents the further away those neighborhoods are from disamenities (see Figure 4). Beginning in 1970, the correlation between race and proximity to disamenities begins to weaken, and in 2000 there is no correlation.

Figure 4: Correlation Between Race and Distance to Disamenities



The data on income are also striking. Income data were not available for 1940 and there were no data on median income for the decades in question. Rather, the data provided income categories and the number of people in each tract that fell into each. Our team categorized the upper half of the categories as high income and the lower half as low income and then analyzed the census tracts with respect to distance to disamenities. For 1950, the data show a strong correlation between income and distance from disamenities. Specifically, the higher the percentage of people with high income the further the neighborhood is from disamenities (see Figure 5). That correlation is much less apparent by 1960.

Figure 5: Correlation Between Income and Distance to Environmental Disamenities

The data also illustrate some correlation to poverty at the time of the decisions, with some poor whites also living closer to where disamenities are allowed. As noted, the link to poverty is significantly weaker by 1960, though it never fully disappears.

This data suggests a decade-by-decade correlation between race and the siting of disamenities at the time that the city made the decisions. The Baltimore zoning system placed unwanted land uses in neighborhoods with a high percentage of African-American residents such that African-American residents were much more likely to live close to disamenities in each decade between 1940 and 1970.[155] That correlation continued in 1980 and 1990 to a lesser extent and then disappeared completely in 2000.[156] These data powerfully refute the notion that African-American residents in Baltimore

155 *See supra* fig.3.

156 *See supra* fig.3.

moved to the nuisance and thus that the postsiting market forces created distributional inequities. Our spatial analysis makes clear that for each decade between 1940 and 2000, the zoning process in Baltimore placed disamenities disproportionately in black neighborhoods, which suggests that race, and not postsiting market forces, served as a rule or a catalyst in the distribution of Baltimore's unwanted land uses during the period 1940 to 2000.

Our data therefore suggests that race operated as a rule in the zoning process and thus in the emergence of land-use patterns in Baltimore. What is not clear, however, is how race became a rule in a system that employs facially neutral operational language[157] and that did not overtly import consideration of race into land-use decisionmaking. What we do know is that race seemed to be a crucial factor in land-use decision making at least until 2000. What we do not know is how or why.

Looking at cities as emergent systems provides a crucial method for evaluating these data. Given that there is no overt racism in the ordinance itself, absent the forensic work called for by Jane Jacobs[158] there is no way to understand how race operated in the system after 1940. Emergence theory proposes that scholars can evaluate a single rule such as race, explore its relationship with other rules such as market forces, and try to understand the interplay between them.[159] Identifying the role of race provides a roadmap for reform, an indication of the root cause or systemic feature that injected race into the zoning system. Identifying how race became a rule in the zoning system is the first step to refashioning the system.

V. RACE AND RESIDENTIAL PATTERNS: A LEGACY OF SEGREGATION

In order to understand how and why race became a hidden rule in land-use distributions in Baltimore, we must look to the history of race and land-use patterns in Baltimore in the decades before the zoning system came into force. In the years after the Civil War, African-Americans lived across the city of Baltimore, in each of its twenty wards.[160] By the early twentieth century, however, block-by-block segregation had begun to give way "'to sizeable hemmed-in ghettos in East Baltimore, West Baltimore, and South Baltimore.'"[161] Then, in May 1911, Mayor J. Barry Mahool signed into law a segregation ordinance that was meant to provide "so far as practicable, for the use of separate blocks for white and colored people for residences,

157 "[T]he establishment, location, construction, maintenance and operation of the conditional use will not be detrimental to the public health, security, general welfare, or morals." BALT., MD., ZONING CODE §14-204(1) (2009).

158 *See supra* notes 34–36 and accompanying text.

159 *See, e.g.*, JOHNSON, *supra* note 22, at 18–19.

160 Garret Power, *Apartheid Baltimore Style: The Residential Segregation Ordinances of 1910–1913*, 42 MD. L. REV. 289, 289–90 (1983).

161 G.L. Buckley & C.G. Boone, *"To Promote the Material and Moral Welfare of the Community": Neighborhood Improvement Associations in Baltimore, Maryland, 1900–1945*, *in* ENVIRONMENTAL AND SOCIAL INEQUALITIES IN THE CITY SINCE 1800 (R. Rodger & G. Massard-Guilbaud eds., forthcoming 2010) (manuscript at 5, on file with authors) (quoting SHERRY H. OLSON, BALTIMORE: THE BUILDING OF AN AMERICAN CITY 372 (rev. & expanded ed. 1997)).

churches and schools."[162] Organized and authored by progressives who agreed that "blacks should be quarantined in isolated slums in order to reduce the incidents of civil disturbance, to prevent the spread of communicable disease into the nearby white neighborhoods, and to protect property values among the white majority,"[163] the ordinances went through several iterations due to procedural flaws and in response to state court objections.[164] Finally, as Garret Power writes, "[T]he legal significance of housing segregation laws . . . was [short lived]" because the Supreme Court struck down a similar ordinance in Kentucky, which wiped out the Baltimore ordinance.[165] Power goes on to argue, however, that the "historical significance of Baltimore's segregation ordinance remains" because the ordinance set the stage for "a covert conspiracy to enforce housing segregation, the vestiges of which persist in Baltimore yet today."[166]

In response to the Supreme Court's decision, Mayor Mahool's replacement, Mayor James H. Preston, set out to replace the de jure segregation with de facto segregation, "enforced by a conspiracy in restraint of rental or sale" of housing to blacks on blocks that had been setout as white neighborhoods.[167] The organized plan was to use white property associations, the real estate board, the health department, and the city building inspector to ensure that African-Americans left the neighborhoods where they were in the minority and did not enter those neighborhoods that were already white.[168] Over time, the conspiracy grew and formalized, with white neighborhood associations adopting racial segregation as one of their top priorities and neighborhood protection associations passing restrictive covenants that prohibited the rental or sale of properties to blacks.[169] Up to as late as 1930, associations coordinated their efforts across neighborhoods and worked together to share information and enforce restrictive covenants.[170]

The zoning system also served to perpetuate and enforce segregation in the city. The majority of preexisting residential areas were categorized as residential districts, which not only shielded them from commercial and industrial intrusion, but also greatly restricted the construction of affordable housing, such as apartments and block row houses.[171] The zoning commission originally intended to follow Mayor Preston's containment strategy to require that newly constructed dwellings in certain affluent—and mostly white—areas be constructed only as single-family cottages while

162 Power, *supra* note 160, at 289.

163 *Id.* at 301.

164 *Id.* at 302–06.

165 *Id.* at 289.

166 *Id.*

167 Power, *supra* note 160, at 315; *see also* Buckley & Boone, *supra* note 161 (manuscript at 6).

168 Power, *supra* note 160, at 315. When one property owner attempted to rent a unit on an all-white block to a black family, the real estate board and the health inspector paid him a visit and threatened endless code violations; he relented. *Id.*

169 Buckley & Boone, *supra* note 161 (manuscript at 13, 21).

170 *Id.* (manuscript at 14).

171 Power, *supra* note 113, at 631, 648.

permitting apartments and row houses in less affluent neighborhoods.[172] Maryland's highest court, however, invalidated the zoning commission's attempt to require that each parcel in a section of Baltimore's Forest Park neighborhood be "'constructed as a separate and unattached building'" because the city's police power could not be used for the purpose of segregating social classes.[173] Though the zoning commission had to accept the court's prohibition against one-class residence districts, the commission employed height districts to "segregate[] cottages from block rows and apartments."[174] Nearly all of the newly annexed areas on the outer edges of the city were classified as extremely low-height districts; they were also required to have at least one side yard.[175] In practice, these measures combined to "assure[] that only detached or semi-detached dwellings would be constructed there."[176] Height district maps pointedly restricted tall apartment buildings to various inner-city areas.[177] This segregation was deliberately "made to appear [as] a side effect of civil engineering, not the desired product of social engineering."[178]

During this same period, other public and private actors, including banks and the federal government, began to use race as a rule in their decision making in a way that isolated black residents in certain neighborhoods of Baltimore.[179] In 1937, the Federal Home Owners' Loan Corporation (HOLC) conducted a survey of residential neighborhoods in order to assign a security grade to each neighborhood based on the perceived risk of default.[180] HOLC was a New Deal federal agency assigned to refinance homes in danger of foreclosure.[181] "Among the criteria used to assess risk were occupation of residents, average annual income, predominant nationality, percentage of 'negro families' to total number of families, percentage of families on relief, and 'threat of infiltration of foreign born, negro or lower grade population.'"[182] In addition, surveyors were instructed to estimate the rate of change occurring in a given population.[183] The neighborhoods deemed most unstable and highest risk were given a grade of *D*, were labeled *hazardous*, and outlined in red on the original maps—hence the term redlining.[184] Neighborhoods deemed in transition were labeled *declining* and were given a grade of *C*.[185]

172 *Id.* at 652–53.

173 *Id.* at 653 (quoting Byrne v. Md. Realty Co., 98 A. 547, 549–50 (Md. 1916)).

174 *Id.*

175 *Id.*

176 *Id.*

177 *Id.* Specifically, tall apartment buildings were limited to the inner-city areas along Charles Street, University Parkway, Eutaw Place, and Lake Drive. *Id.*

178 *Id.*

179 Power, *supra* note 160, at 319; SHERRY H. OLSON, BALTIMORE: THE BUILDING OF AN AMERICAN CITY 325 (rev. & expanded ed. 1997).

180 Buckley & Boone, *supra* note 161 (manuscript at 18).

181 *Id.*

182 *Id.*

183 *Id.*

184 *Id.* (manuscript at 18–19).

185 *Id.* (manuscript at 19).

The impact of redlining cannot be overstated—across the country banks and savings and loans refused to provide financing for homes and small businesses in the neighborhoods that received *D* grades.[186] In addition to the lack of financing for homes and businesses, Jane Jacobs noted that these neighborhoods were stigmatized and that as a result the middle class fled—a crippling blow to neighborhood stability.[187]

There can be no doubt that the HOLC reports had a profound impact on the stability of affected neighborhoods, or that the criteria were explicitly racist. Several of the redlined neighborhoods in Baltimore (see Figure 6) received those grades because of the "[n]egro concentration,"[188] or the "heavy concentration of foreigners."[189] Also significant is that most of the Baltimore neighborhoods that received *D* grades had high percentages of black residents (twenty percent or more) and that the reports also noted the obsolescence of the housing stock,[190] the encroachment of industrial uses,[191] or the noise from business.[192] Of the seven neighborhoods that received *D* grades, six had twenty percent or more African-American residents.[193] The neighborhoods that received *C* grades or better were ten percent or less African-American.[194] Several of those neighborhoods were scored as

186 *See* JACOBS, *supra* note 22, at 301.

187 *See id.* at 300–02.

188 HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 1 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 1].

189 HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 4 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 4].

190 *Id.*; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 5 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 5]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 6 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 6]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 9 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 9].

191 HOLC, GRADE D, AREA 5, *supra* note 190; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 8 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 8].

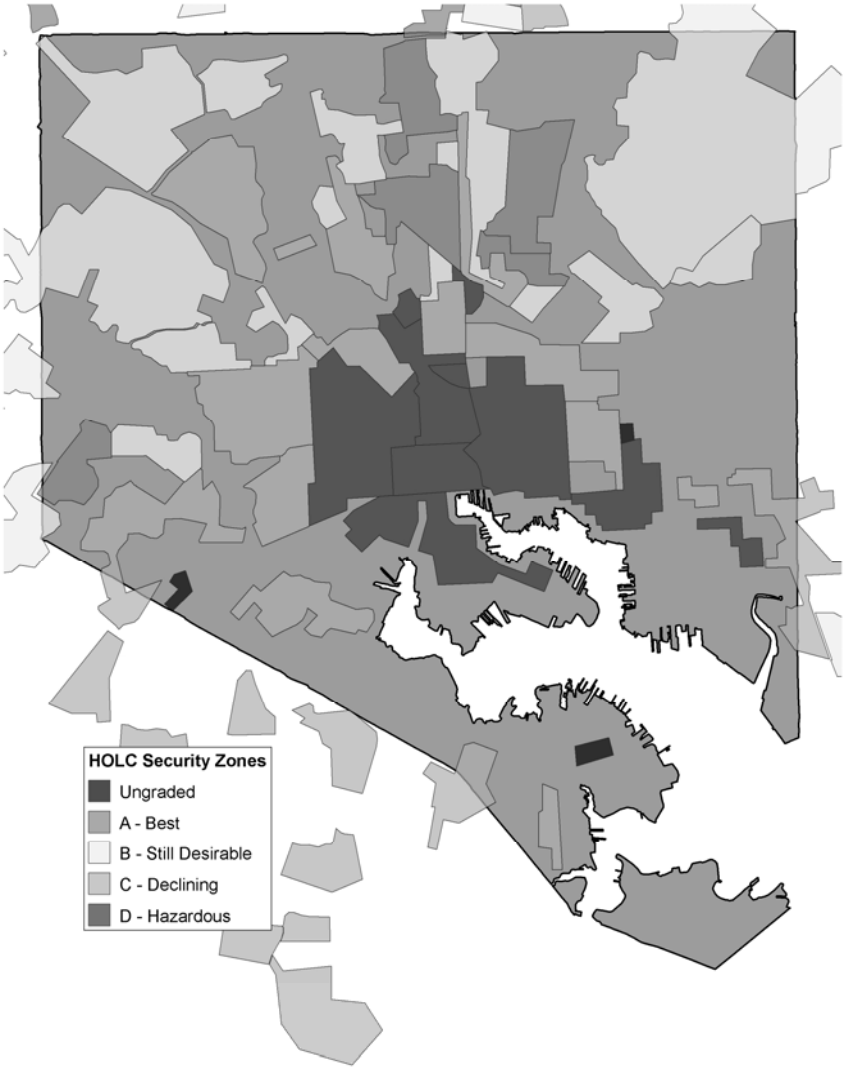
192 HOLC, GRADE D, AREA 9, *supra* note 190.

193 HOLC, GRADE D, AREA 1, *supra* note 188; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE D, AREA NO. 2 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE D, AREA 2]; HOLC, GRADE D, AREA 4, *supra* note 189; HOLC, GRADE D, AREA 5, *supra* note 190; HOLC, GRADE D, AREA 6, *supra* note 190; HOLC, GRADE D, AREA 8, *supra* note 191; HOLC, GRADE D, AREA 9, *supra* note 190.

194 HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 1 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 1]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 2 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 2]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 3 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 3]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 4 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 4]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 5 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 5]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 12 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 12];

C (endangered) due to the "[i]nfiltration" of African-Americans and the others because of poverty or the obsolescence of the housing stock.[195]

Figure 6: Home Owners' Loan Corporation Zones (HOLC) for Baltimore City[196]



HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 13 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 13].

195 HOLC, GRADE C, AREA 1, *supra* note 194; HOLC, GRADE C, AREA 2, *supra* note 194; HOLC, GRADE C, AREA 3, *supra* note 194; HOLC, GRADE C, AREA 4, *supra* note 194; HOLC, GRADE C, AREA 5, *supra* note 194; HOLC, GRADE C, AREA 12, *supra* note 194; HOLC, GRADE C, AREA 13, *supra* note 194.

196 This map was created by the geographic information system team by geo-coding the addresses from the HOLC reports.

Over the course of the early twentieth century, then, de facto and then de jure segregation forced blacks in Baltimore to live in certain neighborhoods. The HOLC surveys confirm that those neighborhoods suffered from dilapidated housing stock and also that those neighborhoods already hosted significant commercial and industrial activity.[197] Five of the six neighborhoods with twenty percent or more African-American residents that received a *D* had a significant amount of industrial "encroachment" or were in areas already zoned industrial or commercial.[198]

De facto segregation, and the public and private conspiracy that included banks and the original zoning system, coupled with the white flight to the suburbs, led to a dramatic change in the landscape of Baltimore.[199] During the period 1918–1930, the white population of the city declined by half and the African-American population increased from fifteen percent of population to thirty percent of the population.[200] By 1930, Baltimore had become "a black center surrounded by a white ring."[201] Furthermore, a 1933 study found that the blighted parts of the city were predominantly populated by blacks, with black residents living in districts that had not yet been connected to the sewer, received few city services, and had no garbage pickup.[202]

The historical analysis confirms that the prezoning residential patterns were set by racism and not the free market.[203] The evidence is clear that racism was an explicit rule that created an emergent pattern for Baltimore that put black residents in certain, specific neighborhoods defined by poor housing stock and a proximity to commercial and industrial uses. As such, race and racism was clearly and explicitly a rule in creating emergent patterns of settlement and distribution of LULUs up to 1940.

Taken together, this historical analysis and our data on zoning special-use permits and race suggests that somehow the facially neutral zoning process perpetuated the explicit racism of the prezoning period.[204]

197 HOLC, GRADE D, AREA 4, *supra* note 189; HOLC, GRADE D, AREA 5, *supra* note 190; HOLC, GRADE D, AREA 6, *supra* note 190; HOLC, GRADE D, AREA 8, *supra* note 191; HOLC, GRADE D, AREA 9, *supra* note 190.

198 HOLC, GRADE D, AREA 1, *supra* note 188; HOLC, GRADE D, AREA 5, *supra* note 190; HOLC, GRADE D, AREA 6, *supra* note 190; HOLC, GRADE D, AREA 8, *supra* note 191; HOLC, GRADE D, AREA 9, *supra* note 190.

199 *See* Power, *supra* note 160, at 317–19; SHERRY OLSON, BALTIMORE 57 (1976).

200 Power, *supra* note 160, at 316; *see* OLSON, *supra* note 199, at 52–53.

201 Power, *supra* note 160, at 316; *see also* OLSON, *supra* note 199, at 52–53.

202 Power, *supra* note 160, at 317. This pattern of isolation and withholding of basic services to black neighborhoods occurred during this period across the country. COLE & FOSTER, *supra* note 46, at 69.

203 Power, *supra* note 160, at 325 ("The white majority, first through the segregation ordinances and then through a publicly sponsored conspiracy, enforced racial segregation in the city."); *see* OLSON, *supra* note 179, at 325.

204 We considered providing demographic information on the BZA and the city council during this period. Certainly, changes to these bodies provide fertile ground for research into the disappearance of the disamenity gap in 2000. For the purposes of this Article, however, such data are not central. In fact, our primary goal here is to show how race was injected into the system, quite apart from the attitudes of the individual decision makers. We purposefully are

The question, then, is how and why race continue to serve as a rule and a feedback loop in the emergent land-use patterns from 1940 to 2000. Unpacking the mechanism is the final step in understanding how race has served as a rule and whether the current land-use distribution system needs to be recalibrated with different feedback loops.

VI. RACE AS A RULE IN BALTIMORE'S ZONING: 1940 TO 2000

Professor Dara Roithmayr has developed a model to describe the processes by which racial inequalities become entrenched, or "locked-in," societal institutions.[205] The first and perhaps most fundamental precept of the locked-in model is that present racial inequalities "can be traced to earlier events that have charted a particular course of history for different racial groups."[206] For example, Professor Roithmayer points to research indicating that housing discrimination "earlier in the century produced a surplus in property value for white . . . . [homeowners who] then were able to pass down the value of that surplus . . . to their children, in the form of financing for a college education and down payments for homes."[207] Such asset surpluses have had a strong effect in cementing disparities between the *haves* and the *have-nots*.[208]

The second precept of the locked-in model is that affluent communities' early anticompetitive advantages become self-reinforcing.[209] "As with economic markets, in race relations, early anti-competitive conduct can produce increasing returns for the early mover. In the context of residential segregation, for example, early monopoly advantage[s] . . . reproduce[d] [themselves] through a variety of mechanisms . . . ."[210] Finally, "racial disparities . . . persist indefinitely" unless there is some type of "intervening event."[211] As racial inequality becomes locked in place, it may also become prohibitively expensive to eliminate.[212] Analogizing to the rules of the marketplace, Professor Roithmayr reasons that "[a]ny policy looking to remedy locked-in racial inequality would incur the structural and political switching costs of restructuring or modifying routine institutional practices. If switching costs increase as time passes, these costs may help to further cement in racial inequality as part of the U.S. social landscape."[213]

Despite facially neutral standards, our variance data suggests that zoning perpetuated, "locked-in," and exaggerated the effects of the earlier overt racism in land-use planning. In this way, race was incorporated as a

not making a claim on the attitudes or behaviors of the individual decision makers after 1940, but rather seek to illustrate how earlier explicit racism can continue in the system.

205 Dara Roithmayr, *Locked In Segregation*, 12 VA. J. SOC. POL'Y & L. 197, 197, 209 (2004).

206 *Id.* at 209.

207 *Id.* at 211 (citation omitted).

208 *See id.*

209 *Id.* at 210.

210 *Id.* at 209–10.

211 *Id.* at 210.

212 *Id.*

213 *Id.* (citation omitted).

rule in city planning through a facially neutral standard. In fact, the zoning variance analysis indicates that racism can be locked-in not just to societal dynamics but indeed that racism may be locked in as a rule in legal processes in such a way that some "intervening event" may be required to cleanse the legal system and reestablish its validity.

The first stage of the incorporation of race into the formal zoning process came during the creation of the zoning districts themselves. Not all preexisting residential areas were categorized as residential districts by the zoning commission.[214] In fact, the zoning commission's "plan placed virtually all of south and southeast Baltimore in a large and inclusive industrial zone."[215] Excepting certain affluent "enclaves" that were allowed to remain residential, the newly designated industrial zone swallowed numerous residential neighborhoods, including Fells Point, Locust Point, the Otterbein, Pig Town, and Fairfield.[216] Altogether, "approximately 11,000 dwellings—many of [which were] occupied by [African-Americans] and immigrants—were placed within the industrial zone."[217] The industrial zoning designation would be a windfall for industrial factories.[218] Previously, large-scale industrial factories were reluctant to locate near residential areas because they would be vulnerable to private nuisance lawsuits brought by nearby homeowners who might seek to enjoin noxious uses or exact money damages.[219] Industrial zoning designations, however, would help remove this impediment because courts deferred to legislative declarations that particular areas should be used for industrial purposes.[220] In addition, the zoning designations would allow industrial companies to perform even the most noxious and intense industrial uses directly adjacent to dwellings; after all, seemingly any activity was permissible in industrial zones as a matter of legal right.[221] Because the zoning commission's designation would ultimately be a legislative action by the city council, industrial factories would not be required to obtain discretionary permits from adjudicative boards.[222] By classifying certain residential communities as industrial zones, the zoning commission ensured that these marginalized communities would be forced to accept noxious uses without the possibility of an adjudicative

214 Power, *supra* note 113, at 660.

215 *Id.*

216 *Id.*

217 *Id.* Historian Sherry Olson has documented this widespread pattern throughout Baltimore County. OLSON, *supra* note 199, at 57 ("Half the [African-American] communities in Baltimore County were zoned for industrial or commercial use.").

218 Power, *supra* note 113, at 660.

219 *Id.* (citing Jackson v. Shawinigan Electro Prods. Co., 132 Md. 128 (1918) (requiring money damages be paid to adjacent homeowners because noxious fumes from a recently constructed ferro-silicon plant in East Baltimore constituted a nuisance)).

220 *Id.* (quoting Bove v. Donner-Hannah Coke Corp., 258 N.Y.S. 229, 236 (N.Y. App. Div. 1932) ("It is not for the court to step in . . . and condemn as a nuisance a business which is being conducted . . . at the very spot where the [zoning ordinance] said that it might be located.")).

221 *See id.* at 631.

222 *See id.* at 660; RATHKOPF ET AL., *supra* note 136, § 61:1–:50, at 61-2 to 61-136.

hearing—at which neighbors might convince decision makers not to permit certain activities so close to their homes—or private nuisance lawsuits.[223]

Soon after zoning went into effect, Baltimore's white working class residents learned a valuable lesson from the affluent communities on the periphery of the city.[224] They began to realize that just as the middle class had been excluded from upper class communities through a variety of exclusionary zoning mechanisms, so too could they work to keep out others.[225] White working class residents feared both encroaching commercial uses—such as gasoline filling stations, groceries, and drug stores—and "rooming and apartment houses" that would deteriorate residential areas as part of a "negro invasion."[226] Accordingly, community groups began springing up all over Baltimore.[227] By 1925, seventeen neighborhood improvement associations held meetings to discuss various perceived threats to their neighborhoods.[228] These neighborhood improvement associations would later prove to be extremely powerful institutions capable of rallying their members to pressure the BZA and city council to steer proposed LULUs away from their neighborhoods and into marginalized neighborhoods.[229]

Because the city council reserved itself the power to "amend, supplement, or change" the zoning districts at its own discretion,[230] the council was quickly inundated with requests for zoning changes of individual parcels.[231] In some cases, community groups made requests to down-zone nearby undeveloped parcels from commercial to residential, thereby protecting their neighborhoods from anticipated commercial encroachment.[232] In other cases, shrewd business leaders made requests to up-zone residential areas into commercial districts, thereby seizing upon perceived market opportunities.[233]

The de facto segregation scheme had isolated black residents in certain neighborhoods that had preexisting industrial and commercial character and, as such, that scheme locked black residents into neighborhoods with

223 *See* Power, *supra* note 113, at 660.

224 *See id.* at 666–67.

225 *Id.*

226 *Id.* at 667 (citing *Zoning Body Moves to Bar Row Houses*, SUN (Balt., Md.), Jan. 4, 1924, at 3).

227 *Id.* at 667–68.

228 *Id.* at 667. *See generally* Buckley & Boone, *supra* note 161 (manuscript at 9–18) (discussing the concerns and meetings of various neighborhood improvement associations).

229 Rachel D. Godsil, *Remedying Environmental Racism*, 90 MICH. L. REV. 394, 396 (1991) (noting that a result of opposition to hazardous waste facilities by well-meaning environmentalists in affluent communities is that the sites are placed in predominantly poor, minority communities); Buckley & Boone, *supra* note 161; *see also* James Hamilton, *Testing for Environmental Racism: Prejudice, Profits, Political Power?*, 14 J. POL'Y ANALYSIS & MGMT. 107 (1995) (finding that levels of political activism were negatively associated with the probability of hazardous waste facility expansion).

230 Balt., Md., Ordinance 922 (May 19, 1923).

231 Power, *supra* note 113, at 636.

232 *Id.*

233 *See id.*

lower zoning protection and a higher number of preexisting disamenities.[234] This pattern for Baltimore confirms studies in other cities, which indicated that exclusionary zoning has had the effect of perpetuating residential segregation.[235] Permitting some LULUs by right not only mutes the affected community's voice, but also prompts its residents to leave because noxious industrial or commercial uses undermine "the quality of the neighborhood . . . [t]o the extent that . . . residents were displaced."[236] Furthermore, as Jane Jacobs noted, conventional zoning is inflexible insofar as it is "based on the assumption that segregating uses (of building and land) from one another is desirable."[237] Jacobs was concerned that conventional zoning creates rigidity in cities, designating separate uses to separate areas, and disallowing the possibility of adaptation and diversity.[238]

This rigidity inherent in conventional zoning exacerbated inequality. Our analysis suggests that the system benefits some neighborhoods over others, with the actual segregation of uses benefiting those neighborhoods that were initially free of noise and pollution since additional noise and pollution funneled to those neighborhoods that had historically experienced these burdens. Zoning in Baltimore did in fact segregate unwanted land uses—but it did not isolate them from all residents, just from white residents. The earlier racial segregation intersected with a zoning system that segregated unwanted land uses to further concentrate the unwanted land uses in the black neighborhoods during the period 1940 to 2000.

The seemingly neutral zoning decisional process then perpetuates and extends the earlier racism in two ways: First through the treatment of prior nonconforming uses, and second through the exaggeration of the earlier redlining through the "appropriateness" standard. The facially neutral decisional approach to prior nonconforming uses seemingly injected the earlier racism into the later zoning system because under the special-use process in Baltimore, a prior nonconforming use was allowed to continue if it existed before the code.[239] Because black residents were concentrated in

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234 *See* Jon C. Dubin, *From Junkyards to Gentrification: Explicating a Right to Protective Zoning in Low-Income Communities of Color*, 77 MINN. L. REV. 739, 740–41 (1991).

235 Yale Rabin has documented several instances of what he terms "expulsive zoning," in which the dominant political power deliberately imposes zoning districts that allow LULUs by right. Yale Rabin, *Expulsive Zoning: The Inequitable Legacy of Euclid*, *in* ZONING AND THE AMERICAN DREAM: PROMISES STILL TO KEEP 101, 106–18 (Charles M. Haar & Jerold S. Kayden eds., 1989); *see also* Dubin, *supra* note 234, at 740–41. *See generally* Arnold, *supra* note 52 (documenting the high level of LULUs in low-income, minority areas and discussing how new land use planning that involves these communities is the "next frontier" of the environmental justice movement).

236 Rabin, *supra* note 235, at 102, 107–08.

237 Jane Jacobs, Performance Zoning as an Alternative to Use Zoning (Nov. 28, 1972) (unpublished manuscript, on file with Burns Library, Boston College).

238 *Id.*

239 Balt., Md., Ordinance 1247 § 1, para. 11 (Mar. 30, 1931) (containing Baltimore's initial zoning ordinance). The BZA allowed prior nonconforming uses to continue at a site when it found "that a non-conforming use [had been] established prior to the passage of the Zoning Ordinance [and had] not been abated." *See, e.g.*, Joseph Burman, No. 2-38 (Balt. Bd. of Zoning Appeals Jan. 11, 1938) (on file with authors).

areas with high percentages of commercial and industrial uses before the zoning code came into effect,[240] it seems likely that they were subjected to more such conditional or "special" uses in the period 1940 to 1970 as unwanted land uses came forward and were granted a special-use permit as prior nonconforming uses.[241] Our analysis of the case files for the some 1000 decisions we looked at suggests that a significant number of the conditional uses were granted on these grounds in the early years of the zoning system. Of the files we looked at, 14% of the special-use permits in the 1940s and 17% in the 1950s were granted on these grounds.[242] In the 1960s and 1970s, the number of special uses granted for prior nonconforming use dropped to 7% and then 5% respectively.[243]

The zoning decisional standards also extend the role of race and racism over the decades by exaggerating and perpetuating the effects of redlining. As noted, conditional uses are reviewed "because of their unique characteristics," and with "consideration, in each case, of the impact of those uses on neighboring land and of the public need for the particular use at the particular location."[244] In deciding whether to grant a conditional use, the zoning board in Baltimore must find that "the establishment, location, construction, maintenance, and operation of the conditional use will not be detrimental to or endanger the public health, security, general welfare, or morals;"[245] "the authorization is not otherwise in any way contrary to the public interest; and . . . [the authorization] is in harmony with the purpose and intent of this article."[246] In short, the key decisional analysis focused on whether the proposed special use would be detrimental to the public health and general welfare of neighboring land. Such a decisional standard most likely explains in part the disproportionate impact of special-use permits on black residents and the continuation of race as a rule in land-use patterns. Because of redlining, black neighborhoods lacked investment and thus land and housing stock deteriorated.[247] At the time of the HOLC reports, black residents had been isolated in neighborhoods through de facto segregation that suffered from "heavy obsolescence"[248] in the housing stock. Continued lack of investment led to abandoned land or housing stock declines.[249]

240 *See* CHARLES LORD & KEATON NORQUIST, QUALITATIVE ANALYSIS OF ZONING CASES REVIEWED IN MARYLAND STATE ARCHIVES (Jan. 9, 2009) (on file with authors) (containing original case file photographs and spreadsheet); *see also supra* notes 215–17.

241 *Id.*

242 *Id.*

243 *Id.*

244 BALT., MD., ZONING CODE § 14-101(b) (2006).

245 *Id.* § 14-204(1).

246 *Id.* § 14-204(3)–(4).

247 *See generally* JACOBS, *supra* note 22, at 284–85 (describing impact on land and housing inside a "slum" and how it can be improved by "unslumming").

248 HOLC, GRADE D, AREA 4, *supra* note 189; HOLC, GRADE D, AREA 5, *supra* note 190; HOLC, GRADE D, AREA 9, *supra* note 190.

249 *See* HOLC, GRADE D, AREA 9, *supra* note 190 (suggesting that in area 9, "[h]eavy obsolescence of residential property" caused an increase in commercial use for the property rather than continued residential use).

Conceivably, this provided a rationale for unwanted land uses because the neighboring land is either vacant or the buildings are already rundown.

A 1964 case illustrates the prophylactic force of the higher-quality housing stock and more pristine neighborhood conditions in white neighborhoods. In defeating a request for a variance for parking and storing cars at 3002 Gibbons Avenue, the opponent argued to the BZA: "We would hate this city to point to Hamilton as a place where they have a junk yard in a highly, or what was regarded as one of the best residential areas in this entire city."[250]

The insidious impacts of the "appropriateness" analysis and its likely intersection with disinvestment were clearly visible when two landowners applied for the same use in the same year. In 1988, for example, a business owner applied for a conditional-use permit to establish an auto repair shop with a paint shop at 6540 Holabird Avenue.[251] Although the case was decided on procedural grounds the planning commission recommended to the BZA that the application be denied because the neighborhood was "very well maintained."[252] That same year, another developer applied for a conditional-use permit for an auto repair and storage business at a vacant lot at 701 Dundale Avenue.[253] Because the lot was vacant, the BZA allowed the conditional use, arguing that it was a "creative use" for the site.[254]

Our database shows that applicants sought a significant number of special-use permits over the 1950s and 1960s for parking lots and junkyards.[255] In fact, 18% of the special-use permits we looked at in the 1930s, 27% in the 1940s, and 24% in the 1950s represented these two uses.[256] Such uses, according to Jane Jacobs, are particularly detrimental to neighborhood cohesion because they provide nothing to a neighborhood's "general convenience, attraction or concentration of people" but make an "exorbitant" demand on the land.[257] These types of uses create dead zones along huge sections of a block or blocks but create no life on the street, no street traffic, and no chances for neighbors to connect.[258] Thus, these uses accelerate the cycle of neighborhood decay.[259] These uses also perhaps

250 Charles L. Hare, Appeal No. 87-64, at 28 (Balt. Bd. of Zoning Appeals Feb. 20, 1964) (on file with authors).

251 Patrick Sipes, Appeal No. 263-88 (Balt. Bd. Of Zoning Appeals Aug. 9, 1988) (on file with authors).

252 Memorandum from Larry Reich, Dir., Dep't of Planning, City of Balt., to Gilbert V. Rubin, Executive Dir., Bd. of Mun. & Zoning Appeals (Aug. 8, 1988) (on file with authors); *see* Patrick Sipes, Appeal No. 263-88X (Balt. Bd. of Zoning Appeals Aug. 16, 1988) (on file with authors).

253 Nat'l Car Care Dev. Corp., Appeal No. 382-88X, at 1 (Balt. Bd. of Zoning Appeals Nov. 7, 1988) (on file with authors).

254 *Id.* at 3.

255 Through the 1940s and into the 1950s, there were a surprising number of chicken killing and dressing operations. LORD & NORQUIST, *supra* note 240.

256 *Id.* Applications for these uses tapered off to 18% in the 1960s, 7% in the 1970s, and 12% in the 1980s. In the 1990s, of the files we reviewed we found an increase in applications for these two uses to 18%. *Id.*

257 JACOBS, *supra* note 22, at 230.

258 *Id.* at 231.

259 *Id.*

create a self-perpetuating legacy—with each such use providing a rationale under the "appropriateness standard" for more such uses on neighboring land.

It is important to note that while the two facially neutral decisional standards clearly extended the role of race as a rule in land-use distribution, there is some indication in our data that the correlation between race and special-use permits runs deeper than the ongoing effects of the de facto segregation and redlining of the 1920s and 1930s. A close analysis suggests in fact that the preexisting industrial uses and the original redlining were not, on their own, the cause for later distributional inequities. A look at the later concentration of disamenities in redlined neighborhoods indicates that the LULUs were not simply concentrated in redlined neighborhoods as a function of the preexisting uses and dilapidated housing stock. In fact, tracing the relationship between redlining and the decade-by-decade distribution of disamenities indicates that the original condition of the neighborhoods is less important than race in the subsequent siting of disamenities. In other words, neighborhoods that were redlined in the 1930s due to some combination of a high percentage of commercial enterprises, industrial encroachment, and racial makeup only received high numbers of disamenities in subsequent decades if the percentage of black residents stayed high or increased.

Our overlay of the redlining maps and the variance data shows a correlation between redlining and the siting of disamenities in 1940. However, as the racial characteristics of these neighborhoods change, the proximity to disamenities changes as well. As the neighborhoods become more black, they either stay high-impact or become high-impact. Redlined neighborhoods from the 1930s that show steady or increasing Caucasian populations see a drop in the impact from zoning in subsequent decades.[260] A study of the concentration of disamenities in each decade in these neighborhoods over time suggests a strong correlation to race in the siting, and less to the original HOLC score.

Specifically, all of the areas with high disamenity impact in 1940 were listed either as "hazardous" (*D*) or "declining" (*C*) in the earlier HOLC reports. Of the hazardous (*D*) neighborhoods, all are high-impact disamenity zones during the 1940s.[261] Remember that six out of seven of these have African-American populations over 20% and that all neighborhoods with a significant percentage of African-American residents are listed as Hazardous.[262] The one *D* neighborhood that is all white (D-2) remains white through the 1970s.[263] This is the one *D* neighborhood that goes from being a high-impact neighborhood in 1940 to being a low-impact zone for

260 The analysis that follows is based on the demographic data in each of the neighborhood reports, *see supra* notes 179–98, cross-referenced with the disamenity-impact maps created by the University of Vermont using our special-use decisional data, *see supra* fig.2, and the demographic data maps for Baltimore created by University of Vermont, *see supra* fig.3.

261 *See supra* figs.2 & 4.

262 *See supra* text accompanying note 193.

263 HOLC, GRADE D, AREA 2, *supra* note 193; *see supra* figs.3 & 4.

disamenities in subsequent decades.[264] Neighborhood D-4 is in west Baltimore and is a black neighborhood in 1940 and stays that way over the rest of the twentieth century.[265] It is a high-impact zone for disamenities in 1940 and it stays high impact in subsequent decades as the black neighborhoods drift west (see Figure 3). Neighborhood D-5 is in south Baltimore and at the time of the redlining in the 1930s it is 50% black and it stays that way through 1970.[266] In 1940, neighborhood D-5 is a high-impact zone for disamenities,[267] but as Baltimore became home to more black residents, with black residents moving west, this neighborhood sees fewer disamenities in subsequent decades and ends up neutral in 1970. Neighborhood D-6 is 35% black in 1940 and in subsequent decades that percentage drifts upward.[268] In 1940, this neighborhood is a high-impact zone[269] and it is a high-impact zone in all subsequent decades. Neighborhood D-8 is 30% black at the time of the HOLC maps and that percentage drifts up from there, but not dramatically.[270] The neighborhood is zoned entirely commercial and the HOLC report suggests that it will convert to a business district[271]—as in other cities, there are residents and families trapped in this zone. This neighborhood was a high-impact zone in 1940 and in all subsequent decades.[272] Neighborhood D-9 was 40% black at the time of the HOLC analysis and the HOLC report values the neighborhood for conversion to business, while also remarking on the "heavy obsolescence" of the residential property and noise from business.[273] Through major demographic shifts over the next three decades, the neighborhood becomes largely black by 1970 and is a high-impact zone for disamenities in each decade.

There is a similar higher correlation to race and disamenities for the neighborhoods listed as "declining" (*C*) in the HOLC reports. Of the five declining neighborhoods that were high-impact zones in 1940 (1, 3, 4, 5, 7), three of the five list African-American "encroachment" and obsolescence as the rationale for that determination.[274] Of the *C* neighborhoods that are not high-impact zones for disamenities in 1940, all are white neighborhoods.[275]

264 *See* HOLC, GRADE D, AREA 4, *supra* note 189.

265 *See* HOLC, GRADE D, AREA 2, *supra* note 193.

266 HOLC, GRADE D, AREA 6, *supra* note 190.

267 HOLC, GRADE D, AREA 5, *supra* note 190.

268 HOLC, GRADE D, AREA 6, *supra* note 190.

269 *Id.*

270 HOLC, GRADE D, AREA 8, *supra* note 191.

271 *Id.*

272 *Id.*

273 HOLC, GRADE D, AREA 9, *supra* note 190.

274 HOLC, GRADE C, AREA 5, *supra* note 194.

275 Areas C-2, C-6, C-8, C-11, C-12, C-13, C-14 are all in either neutral or low-impact zones. HOLC, GRADE C, AREA 2, *supra* note 194; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 6 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 6]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 8 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 8]; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 11 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 11]; HOLC, GRADE C, AREA 12, *supra* note 194; HOLC,

One very poor white neighborhood (C-11) that was listed as declining in the HOLC reports stayed white throughout the study period and is never a high-impact zone for disamenities through 1970.[276] C-8 was a white neighborhood in 1940 and in that decade was a low impact zone for disamenities.[277] The zone was almost entirely black by 1970 as the black neighborhoods moved west, and by 1960 it was no longer a low-impact zone.

There are exceptions to these trends among the declining neighborhoods—exceptions that do suggest some poverty effect as well. Neighborhood C-13 was a mostly white neighborhood that was a low-impact zone in 1940 and in subsequent decades became a high-impact zone even as the population remained largely white.[278] The HOLC inspector for this neighborhood noted a mixture of "foreign" residents in the neighborhood at the time of the initial survey, noted an infiltration of "foreigners" into the neighborhood, and indicated a "heavy" load of relief families in the neighborhood.[279] Another dynamic that could well have been at play was an undercurrent of discrimination against recent, non-English speaking immigrants who had also been isolated in certain neighborhoods.

Of the neighborhoods in 1940 that were low impact for disamenities, only two (C-8 and C-14) were listed as declining and these were both white neighborhoods.[280] Inspectors noted for both areas that there was no infiltration of "foreign" residents.[281] All the rest of the low-impact zones were ranked as highly stable by the HOLC study and all were white neighborhoods.[282] For example, the neighborhood marked A-1 in central Baltimore was described as "very nicely residential neighborhood" with no detrimental influences.[283]

Some testimony from the 1950s suggests that applicants sought out black neighborhoods for unwanted land uses. For example, the attorney for local residents in the Board of Zoning and Appeals case number 943-50, an application for an auto repair shop at 2201 Windsor Street, told the Board, "I don't think [it's] erroneous to say that now that the neighborhood is

GRADE C, AREA 13, *supra* note 194; HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE C, AREA NO. 14 (NS Form-8) (1937) (on file with authors) [hereinafter HOLC, GRADE C, AREA 14]; *see also supra* fig.2. All of these are white areas. HOLC, GRADE C, AREA 2, *supra* note 194; HOLC, GRADE C, AREA 6, *supra*; HOLC, GRADE C, AREA 7, *supra*; HOLC, GRADE C, AREA 8, *supra*; HOLC, GRADE C, AREA 11, *supra*; HOLC, GRADE C, AREA 12, *supra* note 194; HOLC, GRADE C, AREA 13, *supra* note 194; HOLC, GRADE C, AREA 14, *supra*.

276 *See* HOLC, GRADE C, AREA 11, *supra* note 275.

277 HOLC, GRADE C, AREA 8, *supra* note 275.

278 HOLC, GRADE C, AREA 13, *supra* note 194.

279 *Id.*

280 HOLC, GRADE C, AREA 8, *supra* note 275; HOLC, GRADE C, AREA 14, *supra* note 275.

281 HOLC, GRADE C, AREA 8, *supra* note 275; HOLC, GRADE C, AREA 14, *supra* note 275.

282 *See, e.g.*, HOLC, GRADE C, AREA 1, *supra* note 194; HOLC, GRADE C, AREA 2, *supra* note 194; HOLC, GRADE C, AREA 3, *supra* note 194; HOLC, GRADE C, AREA 4, *supra* note 194; HOLC, GRADE C, AREA 5, *supra* note 194; HOLC, GRADE C, AREA 6, *supra* note 275.

283 HOME OWNERS' LOAN CORP., AREA DESCRIPTION: CITY OF BALTIMORE, SECURITY GRADE A, AREA NO. 1 (NS Form-8) (1937) (on file with authors).

mostly colored, the owner seems to be more persistent to have a repair shop there."[284] The attorney went on to argue that appellant

> lives in Reisterstown and . . . 75% of his patronage is white. This neighborhood is colored. Let him go where his trade is. It will be more economical and it will have a tendency to make the protestants feel the city wants to help them in their ambition to have fine decent homes . . . . He will not have the same interest in keeping up the appearances of this community as these home owners, as he doesn't live there.[285]

The opposition in this case had an attorney and managed to get the variance disapproved, but the testimony suggests that perhaps applicants targeted black neighborhoods for unwanted land uses.

In another 1950 case, the board approved an application to expand a preexisting junkyard in a commercial-use district inhabited by African-American residents.[286] The attorney for the residents said that the majority of the neighbors

> are working people and haven't time to come up and make their protest in person . . . . This is, of course, a non conforming use unfortunately for these people. The area is exclusively colored, I believe, and the Board realizes that they are in there, that is their home, it is not their fault but they of necessity have to live in that particular neighborhood. The junk yard is a serious threat both in the way it is being operated now and its location, to the health of the residents of the neighborhood and to the safety. In fact, the junk is being put all over the place[;] it is filthy and unfortunately existed before the zoning came in.[287]

Similarly, in what might be one of the first environmental justice cases in Baltimore, the National Association for the Advancement of Colored People (NAACP) stepped in to help neighbors fight an application for a variance for an operation to incinerate brake shoes at 2301 Boone Street.[288] Neighbors successfully defeated an application for an expansion to the brake shoe facility, referencing impacts on their health.[289] The NAACP submitted a letter protesting the expansion and when the applicant failed to appear the Board found for the neighbors.[290]

It is worth noting that in those cases where the opposition had a lawyer, the rate of disapproval was quite high. This suggests that access to legal services and the ability to raise money to fight special-use or conditional-use permits is central, and that lack of economic and legal resources in black

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284 Transcript of Testimony at 8, A. Boombaum, Appeal No. 943-50, at 5 (Balt. Bd. of Mun. & Zoning Appeals Oct. 18, 1950) (on file with authors) (statement of Josiah F. Henry, Jr., Attorney for the Protestors).

285 *Id.*

286 Jerome Robinson, Appeal No. 483-50 (Balt. Bd. of Mun. & Zoning Appeals June 2, 1950).

287 Transcript of Testimony at 5, *Robinson*, No. 483-50 (statement of Cyril R. Murphy, Jr., Attorney for the Protestors).

288 L.W. Woolford, Appeal No. 288-58 (Balt. Bd. of Mun. & Zoning Appeals July 7, 1958).

289 *E.g.*, Transcript of Testimony at 8, *Woolford*, No. 288-58.

290 *Id.*

neighborhoods could have contributed to the disproportionate number of special-use permits in black neighborhoods in each decade. Among the cases we looked at, of the fifty-eight cases in which an attorney appeared, the board disallowed the conditional use in forty-two of them.[291] This seventy-two percent disapproval rate suggests that access to an attorney was very influential in the outcome of these cases, as it is much higher than the background percentage of disapprovals (or withdrawals), which is forty-one percent for the case files that we reviewed.[292]

Taken together, these narratives and case statistics point to a number of critical dynamics in the zoning process that might also have served to inject race and racism into the land-use distribution system. Specifically, the testimony from these cases suggests that white applicants perhaps targeted special-use permits to black neighborhoods, and that those neighborhoods that could not afford a lawyer were disadvantaged in battling special-use permits. In addition, the testimony suggests that white neighborhoods with high quality housing stock could be insulated from special-use permits.

Legislative changes to the zoning maps that expanded the industrial or commercial zones in African-American neighborhoods could also have created disproportionate impacts in African-American neighborhoods. Indeed, Juliana Mantaay uncovered this dynamic in New York City,[293] and Craig Arnold's multicity study found this to be a common issue in cities across the country.[294] We can assume that the same dynamic played out in Baltimore, though this would make an interesting additional level of analysis.

It is worth speculating as well on the reasons that the correlation between race and the siting of disamenities fell off after 1970 and disappeared by 2000. To begin with, the City of Baltimore was a largely black city by the year 2000, with very few white enclaves (see Figure 3). In addition, to the extent part of the disparity in prior decades was likely attributable to the doctrine of "prior nonconforming uses," as those uses worked through the system there would have been fewer opportunities to grant special-use permits each decade in poor and black neighborhoods on these grounds. Finally, it is possible that stricter limits on conditional uses in the post-1971 version of the code may have reduced the amount of disamenities in residential neighborhoods. For example, scrap yards were listed as "non-conforming" uses in the 1931–1971 code for residential districts.[295] For the period between 1971 to the present, the code allowed conditional approval of scrap yards in heavy industrial (M-3), with the presumption that they are not allowed in other districts.[296]

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291 LORD & NORQUIST, *supra* note 240.

292 *Id.* Of the 583 BZA case files that we looked at closely, either the applicants withdrew or the BZA denied the special use application in 237 of those cases, a disapproval rate of 41%. *Id.*

293 *See generally* Juliana Mantaay, *Zoning Law, Health and Environmental Justice: What's the Connection?*, 30 J.L. MED. & ETHICS 572 (2002) (finding that people living in manufacturing zones are more likely to be poor and members of a minority group).

294 Arnold, *supra* note 52, at 3.

295 *See* Balt., Md., Ordinance 1247 § 1, paras. 6–7, 11 (Mar. 30, 1931).

296 *See* BALT., MD., ZONING CODE § 7-407 (2009).

Another topic for further investigation is the expansion of black political power after 1970 and especially after 1980, and the impact on the distribution of disamenities. In 1970, African-American attorney Milton B. Allen won a city-wide election for State's Attorney, benefiting from a vote split among four white candidates in the Democratic primary.[297] Allen lost a racially-tinged primary in 1974 to William Swisher.[298] In 1982, Kurt Schmoke beat Swisher in the primary and Schmoke went on five years later to be Baltimore's first elected black mayor.[299] The record of city council membership is equally intriguing—it suggests patterns that are relevant to this analysis and require further study. Though no nonwhite members were elected to the city council before 1890, six African-American Republicans were elected to the Baltimore City Council between 1890 and 1930.[300] Between 1930 and 1955, no African-American candidates were elected to the council.[301] From 1955 to the present, there was at least one African-American member of the council, but not until redistricting in 1991 did African-American councilors take even eight of the eighteen seats on the council.[302] These data suggest a significant shift in black political power over the period from 1970 to 1990. Additional research is called for to better understand the correlation between that shift, the changing demographics in the city, and the distribution of disamenities between 1970 and 2000 and then into the twenty-first century.

Taken together, the data make clear that race and racism was a rule that created a significant feedback loop in the emergent city of Baltimore long after the de jure segregation ordinances had been struck down by the Supreme Court. Through first a de facto segregation scheme, and then through the injection of the earlier racism into the zoning system, race and racism created the land-use patterns of modern day Baltimore. At the same time, our data suggest that by the turn of the twenty-first century, unwanted land uses are no longer disproportionately sited in black neighborhoods.

297 David Michael Ettlin, *Milton Allen, City State's Attorney, Dies at 85*, BALT. SUN, Feb. 13, 2003, http://articles.baltimoresun.com/2003-02-13/news/0302130334_1_allen-state-attorney-baltimore/2 (last visited Apr. 18, 2010).

298 *Id.*

299 Alonzo Smith, *Schmoke, Kurt L. (1949–)*, *in* BLACKPAST.ORG, http://www.blackpast.org/?q=aah/schmoke-kurt-l-1949 (last visited Apr. 18, 2010). Schmoke defeated Baltimore's first African-American mayor, Clarence Burns, who had been appointed by outgoing Mayor William Donald Schaefer as he left to be Governor of Maryland. *Id.*

300 Tom Chalkley, *Party Hardy: Baltimore's Republicans Soldier On, Despite the Odds*, BALT. CITY PAPER, June 19, 2002, http://www.citypaper.com/news/story.asp?id=3417 (last visited Apr. 18, 2010). *But see* Thomas E. Carney, *Baltimore*, *in* ENCYCLOPEDIA OF AFRICAN AMERICAN HISTORY, 1896 TO THE PRESENT (2009), http://www.mywire.com/a/Enc-African-American-History-from-1896/Baltimore/9452069 (last visited Apr. 18, 2010) (suggesting that there was not a significantly large population of African-Americans in Baltimore prior to 1890, comparing 15% in 1890 to 60% in 1968).

301 *Id.* ("During the 1930s and 1940s, African Americans had no role in city government, but as they began to populate the Democratic Party, they began to take control of their destiny.").

302 Balt. City Council, History of the Baltimore City Council, http://www.baltimorecitycouncil.com/history.htm (last visited Apr. 18, 2010); Roger Biles, *Black Mayors: A Historical Assessment*, 77 J. NEGRO HIST. 116 (1992). Clarence Burns, a black politician, was city council president before he became the incumbent for the mayor position.

Several critical questions remain, however, about the connections between race and emergent land-use patterns in Baltimore and other cities. To begin with, policy makers must ask whether there are lasting impacts from the race-based feedback loops that seemingly operated in Baltimore for almost a century. In addition, we must ask whether other feedback loops have replaced race as a rule in land-use decision making.

VII. CONCLUSION

Our analysis of zoning special-use permits and their correlation to race during the period 1940 to 2000 has shown that race was a rule in the distribution of unwanted land uses during the twentieth century. Our special-use data confirms that the zoning system in Baltimore distributed unwanted land uses on the basis of race and not a postsiting market dynamic. Explicit racism in the form of segregation ordinances and then segregation campaigns was imported into the zoning system through the operation of facially-neutral standards linked to "appropriateness" through redlining and through the doctrine of prior nonconforming uses, and perhaps through the decisions of private actors and the resources available to actors in the zoning system.

This study confirms methodologically that it is possible to evaluate the feedback loops that operated to define the emergent patterns in cities during the twentieth century. Specifically, our method of using emergence theory to study the rules in the complex system (the City of Baltimore) confirms that research teams can uncover data on siting decisions in the urban context, and that they can use those data to evaluate the correlation between the siting of disamenties and race and income data. Not every city will have zoning decisions in its archives, but for those that do our research method confirms that it is possible to evaluate the role of race and racism in the emergent land-use patterns of the twentieth century American city. Jane Jacobs, it would appear, was correct in positing that it is possible to study the city in the way that scientists approach a research project; and Stephen Johnson, it would appear, is correct in positing that emergent systems such as cities can be understood and that rules and feedback loops can be evaluated against cultural norms and expectations.[303]

Given that race was a rule in the emergent patterns in Baltimore during the twentieth century, cultural, legal, and political conceptions of justice require a significant reexamination of the land-use system and its outcomes even in the twenty-first century. Baltimore's residents live in neighborhoods that are themselves a legacy of almost a century of decision making profoundly, if for many decades inadvertently, infected by racism.[304]

303 JACOBS, *supra* note 22, at 440–41; JOHNSON, *supra* note 22, at 105; *see also* Batty, *supra* note 4, at 770.

304 The legacy of such practices may not be as remote as perhaps some believe. In 2009, the city brought suit against Wells Fargo for allegedly steering African-American residents into higher-interest subprime loans—termed "ghetto loans" by some Wells Fargo employees—even if the residents could afford cheaper traditional loans. Michael Powell, *Suit Accuses Wells Fargo*

As racial inequality is now locked in place, it may be prohibitively expensive to eliminate.[305] Untangling the legacy may be difficult and costly.

The success of our methods suggests that major cities across the country should evaluate their land-use decision making over the twentieth century to investigate the extent to which race and racism played a role in the current distribution of land uses and should develop land-use distribution and investment plans that remediate historical patterns of racism and isolation. The next step for any city is to study its current land-use system to identify the feedback loops at play, and to consider a remedial analysis to correct any continuing resonance of race. Such remedial analysis might consider remedial investments to counteract the effects of racism on isolated neighborhoods and might seek to ensure that the land-use distribution patterns of the twenty-first century reflect the desired political and constitutional norms.

of Steering Blacks to Subprime Mortgages in Baltimore, N.Y. TIMES, June 7, 2009, at A16. A federal judge denied Wells Fargo's motion to dismiss, allowing the city to go forward with its claim that it has suffered damages apart from the individual borrowers because of the number of vacant properties caused by the lending practices and the impact on the city's tax base. Julie Bykowicz, *City Can Proceed with Wells Fargo Lawsuit*, BALT. SUN, July 3, 2009, http://articles.baltimoresun.com/2009-07-03/news/0907020086_1_fargo-lawsuit-foreclosures (last visited Apr. 18, 2010).

[305] *See* Roithmayr, *supra* note 205, at 210.