

# Crime and the Environment—Expanding the Boundaries of Environmental Justice

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## I. INTRODUCTION

The environmental justice movement embodies a substantial melding of social justice and civil rights principles with the seemingly disparate fields of environmental law and policy.<sup>1</sup> Grounded in the idea that every person has an inherent right to security in the safety of her environment, the environmental justice movement seeks to identify, examine, and combat ways the environment negatively and disproportionately affects certain segments of the population.<sup>2</sup> Most often this involves low-income and minority communities bearing a higher health risk from exposure to environmental pollutants and toxins than more affluent communities.

Proximity and exposure to environmental toxins are significant causes of this health disparity, but they are by no means the only factors in play. Toxic exposure does not operate in a vacuum; policy decisions,

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1. See Veronica Eady, *Warren County and the Birth of a Movement: The Troubled Marriage Between Environmentalism and Civil Rights*, 1 GOLDEN GATE U. ENVTL. L.J. 41, 41-44 (2007).

2. See Charles Lee, *Warrant County's Legacy for the Quest To Eliminate Health Disparities*, 1 GOLDEN GATE U. ENVTL. L.J. 53, 56 (2007).

economic considerations, and social factors all play a role in the propagation of this environmental injustice. In fact, so systemic is the reality of higher toxic exposure levels in minority communities that some scholars explain the phenomenon simply as the unfortunate byproduct of a system of institutional racism.<sup>3</sup>

This Comment explains the environmental justice movement in a general sense, and also suggests ways to broaden its focus. Additional subfields and topics not traditionally resting under the umbrella of environmental justice, but which are nevertheless important to the core goals of the movement, offer bold new avenues for academic exploration. Specifically, this Comment examines the relationship between *crime* and the environment and suggests ways the research on this topic can be expanded to better serve the environmental justice movement's policy of promoting social justice.

This crime-environment relationship requires a slightly different perspective on the environment than that to which most are accustomed. Rather than viewing the environment as something external to mankind, this new perspective rejects the distinction between the natural and the man-made environment. From this perspective, it becomes apparent that the environment plays a significant part in shaping not only health outcomes, but also human psychology, sociology, and of particular relevance to this Comment, criminology.

## II. THE ENVIRONMENTAL JUSTICE MOVEMENT

Thirty years ago, few could fathom that North Carolina's predominantly African-American Warren County would one day lead the nation wide charge in the fight for environmental health and civil justice.<sup>4</sup> In the fall of 1982, however, that is precisely what happened. Thousands of Warren County residents gathered that year to protest North Carolina's plan to bury over 400,000 cubic yards of material contaminated with polychlorinated biphenyls (PCBs) in a nearby proposed toxic waste landfill.<sup>5</sup> The material originally became contaminated when a disposal contractor allowed over 12,000 gallons of PCB-contaminated oil to drip out of his transportation trucks over a 210-mile stretch of North Carolina

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3. See, e.g., Thomas W. Merrill, *Private Property and the Politics of Environmental Protection*, 28 HARV. J.L. & PUB. POL'Y 69, 78-79 (2004).

4. See, Robert D. Bullard, Paul Mohai, Robin Saha & Beverly Wright, *Toxic Wastes and Race at Twenty: Why Race Still Matters After All of These Years*, 38 ENVTL. L. 371, 373 (2008).

5. *Id.*

highway.<sup>6</sup> The state's response to the environmental calamity included, among other measures, construction of a PCB landfill in Warren County to store the contaminated material.<sup>7</sup>

At the time, the county was sixty-four percent African-American and ranked ninety-seventh in per capita income out of North Carolina's one hundred counties.<sup>8</sup> Believing their county was targeted for the landfill based primarily on such demographic factors as race and income, the Warren County residents filed suit in federal district court to enjoin construction of the landfill.<sup>9</sup> Ultimately, however, their efforts were rebuffed by the courts,<sup>10</sup> and few avenues of legal recourse remained. Devoid of significant resources and political capital, the low-income minority residents of Warren County were forced to use their only means available to fight the landfill: they took to the streets in protest.<sup>11</sup> The protests were passionate, and they served as an outlet for feelings of marginalization that for years bubbled just under the surface, not only in Warren County, but in countless other socioeconomically depressed cities and towns across the nation.<sup>12</sup> Not until the total arrest count reached 523 and U.S. army soldiers arrived from Fort Bragg to assist the local police force did the authorities fully quell the uprising.<sup>13</sup>

In the end, the landfill went through as planned, but despite the state's victory, the Warren County protests ignited a movement. For the first time in the nation's history, low-income and minority communities began to fight back against a system that consistently located hazardous facilities and toxic waste sites in their back yards.<sup>14</sup> The Warren County protests ultimately laid a solid foundation for what came to be called the environmental justice movement.<sup>15</sup> The protesters' spirit was a call to arms for others fighting for social justice; they may have lost the battle, but in so doing they started a war.<sup>16</sup>

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6. See Robert D. Bullard & Beverly Wright, *Disastrous Response to Natural and Man-Made Disasters: An Environmental Justice Analysis Twenty-Five Years After Warren County*, 26 *UCLA J. ENVTL. L. & POL'Y* 217, 221-24 (2008).

7. See *id.*

8. *Id.*

9. See, e.g., *Twitty v. North Carolina*, 527 F. Supp. 778 (E.D.N.C. 1981); *Warren County v. North Carolina*, 528 F. Supp. 276 (E.D.N.C. 1981).

10. See *Warren County*, 528 F. Supp. at 285-96.

11. See Bullard & Wright, *supra* note 6, at 221-24.

12. *Id.*

13. *Id.*

14. *Id.*

15. See *id.*

16. *Id.*

The foundation the Warren County protesters laid in 1982 did not, however, take form in one fell swoop. Rather, the protests raised awareness in the nation at large, and more importantly, in the hearts and minds of politicians and individuals in communities demographically similar to Warren County.<sup>17</sup> Following the protests, for example, the United Church of Christ, a major organizer of the protest and an instrumental actor in its aftermath, published a highly influential report called *Toxic Wastes and Race in the United States*.<sup>18</sup> The report suggested measures be taken that now, some twenty-eight years later, stand as firm pillars in the environmental justice movement.<sup>19</sup> As inconceivable as it may have been in 1982, Warren County is responsible for sowing the seeds of the modern environmental justice movement as we know it.<sup>20</sup>

A. *What Does It All Mean?*

The success of the Warren County protests in raising awareness of environmental injustice begs some fundamental questions: What does the phrase “environmental justice” actually mean? What issues and concepts does it embody? Absolute definitions of the phrase have eluded scholarly consensus, but certain recurring themes and principles exist. One commentator, for example, defines the environmental justice movement as “a collaboration among social and environmental advocates that addresses the undue burden of exposure to environmental hazards that low-income, minority communities face.”<sup>21</sup> The federal Department of Energy defines environmental justice as “the fair treatment and meaningful involvement of all people—regardless of race, ethnicity, income or education level—in environmental decision making.”<sup>22</sup> Another commentator defines the term as embodying the idea that individuals should be able to “interact with confidence that [their] environment is safe, nurturing, and productive.”<sup>23</sup> The statutory policy of

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17. *See id.*

18. *See* UNITED CHURCH OF CHRIST COMM’N FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL STUDY ON THE RACIAL AND SOCIOECONOMIC CHARACTERISTICS OF COMMUNITIES SURROUNDING HAZARDOUS WASTE SITES 126 (1987).

19. *See, e.g.*, Exec. Order No. 12898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

20. *See* Bullard & Wright, *supra* note 6, at 221-24.

21. Shijuade Kadree, *It’s Getting Harder To Breathe: Addressing the Disproportionate Impact of Asthma Among Minority Children Through Environmental Justice Litigation*, 3 REGIONAL BLACK L. STUDENTS ASS’N L.J. 38, 39 (2009).

22. U.S. Dep’t of Energy, Definition of Environmental Justice, [http://www.lm.doe.gov/Office\\_of\\_the\\_Director/Environmental\\_Justice/EJ\\_Definition\\_and\\_Policy.aspx](http://www.lm.doe.gov/Office_of_the_Director/Environmental_Justice/EJ_Definition_and_Policy.aspx) (last visited Aug. 19, 2009).

23. *See* Lee, *supra* note 2, at 56.

the National Environmental Policy Act (NEPA), considered by many to be the major federal environmental law in the United States, eloquently echoes the heart and soul of the environmental justice movement's vision.<sup>24</sup> NEPA aims to "assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings" by "utiliz[ing] a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment."<sup>25</sup>

Despite the semantic differences between these characterizations, however, a concise and workable definition of environmental justice is simply stated: "[E]veryone has the right to a clean, safe and healthy environment."<sup>26</sup> At its very core, then, the environmental justice movement envisions something quite basic and fundamental. Furthermore, because the environmental justice movement is essentially a melding of civil rights and environmentalism, it is important to bear in mind that the problems it addresses are not exclusive to socioeconomically disadvantaged and minority communities. As one commentator aptly noted, "[W]e're all in the same sinking boat, only people of color are the closest to the hole."<sup>27</sup>

Just like environmental justice, the ubiquitous term "environment" also has a vast array of definitions as diverse as the myriad contexts in which the term is so often used. Traditionally, the term is used to signify some type of association with wildlife or natural resources.<sup>28</sup> Through this traditional looking glass, the environment embodies parks, wildlife refuges, forests, and the like. The post-Warren County environmental justice movement, however, defines the term in a more holistic manner.<sup>29</sup> Through the holistic looking glass, the environment is redefined as "the place where we live, where we work, and where we play."<sup>30</sup> This is a much more expansive conception of the term, not limiting the concept of environment to mere greenery. Rather, the holistic environment includes all surroundings: man-made, natural, and everything in between. A holistically framed definition of the environment allows the

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24. National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (codified at 42 U.S.C. §§ 4321-4370f (2000 & Supp. V 2005)).

25. *Id.*

26. *See* Kadree, *supra* note 21, at 45.

27. MARK DOWIE, LOSING GROUND: AMERICAN ENVIRONMENTALISM AT THE CLOSE OF THE TWENTIETH CENTURY 124 (1995).

28. *See* Lee, *supra* note 2, at 57.

29. *Id.*

30. *Id.*

environmental justice movement to reach into realms unthinkable to the Warren County protesters in 1982. One such example is the urban environment, which is often entirely devoid of traditional environmental features such as trees, grass, and bushes.<sup>31</sup>

All semantics aside, however, a critical question remains: Why is environmental justice important? The short answer is that low income and minority individuals are suffering injustice at the hands of our current political and social systems. These people, because of the inherent political and economic disadvantages they face, are ill-equipped to combat adverse environmental effects politically. The irony, however, is that these are the very people forced to bear that burden. The adage “out of sight, out of mind,” so often spoken in passive avoidance of troubling phenomena, is of no avail to those who share their backyard with a PCB landfill. Furthermore, while the political fight rages on, the adverse medical, psychological, and social consequences of toxic exposure exacerbate this injustice even further. The United Church of Christ’s 1987 report *Toxic Wastes and Race in the United States* exposed to the world this disproportionate effect of environmental toxins on persons of color in low-income communities.<sup>32</sup> The 1987 report was the first of its kind, and it successfully spawned a considerable body of research and investigation.<sup>33</sup>

### B. Room for Improvement

Despite an abundance of positive publicity and academic investigation, however, the question remains whether the environmental justice movement gained any tangible ground in the last thirty years.<sup>34</sup> Amid the cry for change, are low-income communities and people of color actually seeing improved environmental health outcomes? To answer this question, the United Church of Christ commissioned a follow-up study in 2007 to its landmark 1987 report.<sup>35</sup> The new study, *Toxic Wastes and Race at Twenty: Grassroots Struggles To Dismantle Environmental Racism in the United States*, highlighted some victories for the

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31. See Keith H. Hirokawa, *At Home With Nature: Early Reflections on Green Building Laws and the Transformation of the Built Environment*, 39 ENVTL. L. 507, 511-12 (2009).

32. See UNITED CHURCH OF CHRIST COMM’N FOR RACIAL JUSTICE, *supra* note 18, at 126.

33. See Bullard, Mohai, Saha & Wright, *supra* note 4, at 371.

34. *Id.*

35. ROBERT D. BULLARD, PAUL MOHAI, ROBIN SAHA & BEVERLY WRIGHT, UNITED CHURCH OF CHRIST, *TOXIC WASTES AND RACE AT TWENTY 1* (2007), available at <http://www.ejrc.cau.edu/TWART-light.pdf>.

environmental justice movement, but it also revealed a vast laundry list of work yet to be done.<sup>36</sup>

During the past thirty years, the environmental justice movement raised a great amount of awareness and succeeded in bringing its mission to the public and academic conscience.<sup>37</sup> Institutions of higher learning now host symposia on the topic of environmental justice, scholars now study and research a wide range of enviro-social issues, and academic departments of environmental justice now exist in major research universities across the nation.<sup>38</sup> Such publicity and awareness, however, without tangible results on the ground, mean little to the individuals who bear the burden of environmental injustice. Public awareness and academic study are steps in the right direction, but the movement must affect an end to injustice on the ground-level if it is to be judged a true success.

The 2007 report revealed that major problems remain. While there has been some appreciable progress, the fact is that “[p]eople of color are particularly concentrated in neighborhoods and communities with the greatest number of [toxic waste] facilities[,] and racial disparities continue to be widespread throughout the country.”<sup>39</sup>

The prevalence of lead poisoning among low-income and minority children is an alarming and illustrative example of the way these problems persist. Lead poisoning is the leading environmental health threat to all children in the United States.<sup>40</sup> African-American children, however, are five times more likely than white children to suffer lead poisoning.<sup>41</sup> Furthermore, one in seven African-American children living in older housing, where lead paint is more likely to be found, have elevated blood lead levels.<sup>42</sup> One report found that as many as twenty-two percent of African-American children and thirteen percent of Mexican-American children living in older housing suffer from lead poisoning.<sup>43</sup> This is compared to the estimated lead poisoning rate of six percent among white children living in comparable housing.<sup>44</sup> This inequality plainly evinces environmental injustice. Not only is lead

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36. *Id.*

37. *Id.*

38. The University of Michigan, for example, offers an environmental justice Ph.D. program in its School of Natural Sciences. See Univ. of Mich., Nat. Res. & Env't., Environmental Justice Program, [http://sitemaker.umich.edu/sure\\_ej\\_program/home](http://sitemaker.umich.edu/sure_ej_program/home) (last visited Apr. 11, 2010).

39. See Bullard, Mohai, Saha & Wright, *supra* note 4, at 372.

40. BULLARD, MOHAI, SAHA & WRIGHT, *supra* note 35, at 3.

41. See *id.*

42. *Id.*

43. See Bullard, Mohai, Saha & Wright, *supra* note 4, at 377-78.

44. *Id.*

poisoning a very serious biological health concern, it is also linked to lower IQ, lower high school graduation rates, and an increase in juvenile delinquency.<sup>45</sup>

Unfortunately, however, lead poisoning is but one among many other examples of environmental iniquities in need of corrective action. One study conducted by the U.S. Government Accountability office, for example, found that 45.7% of all housing units for the poor sit “within about a mile of factories that reported toxic emissions to the Environmental Protection Agency.”<sup>46</sup> In September 2005, the Associated Press published the results of an analysis conducted based on Environmental Protection Agency data that suggested African-Americans were “79% more likely than whites to live in neighborhoods where industrial pollution is suspected of posing the greatest health danger.”<sup>47</sup> The list goes on and on, but the bottom line is that environmental injustice persists. The environmental justice movement has been highly successful in raising awareness of the problem, but change does not come easily, and there is still a lot of work to do.

### C. *Low-Income and Minority Communities*

Increased awareness of the environmental justice movement and the problems it aims to correct raises the question of why low-income and minority communities in particular face such a high environmental health risk and furthermore, why they struggle to combat the problem. The answer to these questions requires a deeper look into the root causes of adverse environmental health outcomes. While exposure to toxic material is a major factor to consider, this exposure does not work in a vacuum.<sup>48</sup> Other factors, such as a community’s “exposure pathway,” for example, also play an important role in determining overall health risk.<sup>49</sup> Additionally, some populations are inherently more susceptible, biologically, genetically, or even socially, to the effects of toxic exposure.<sup>50</sup> And finally, some communities also suffer the plight of finding themselves in “toxic hotspots,” areas in close proximity to

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45. *Id.* (citing Peter Montague, *Envtl. Res. Found., Pediatricians Urge a Precautionary Approach to Toxic Lead*, ENVTL. HEALTH NEWS, Sept. 28, 2005, <http://www.rachel.org/en/node/6426>).

46. *Id.*

47. *Id.* (citing David Pace, *More Blacks Live with Pollution*, <http://hosted.ap.org/specials/interactives/archive/pollution/part1.html> (last visited Mar. 15, 2010)).

48. *See* Lee, *supra* note 2, at 60-65.

49. *Id.*

50. *Id.*

multiple pollution sources.<sup>51</sup> Examining each of these factors is essential to understanding the breadth and true nature of the problems addressed by the environmental justice movement.

At its most basic and superficial level, the adverse environmentally-related health consequences minority and low-income communities suffer can be explained simply by exposure to pollution due to these communities' proximity to pollution sources.<sup>52</sup> This pollution runs the gamut of wastes stemming from toxic waste sites and industrial facilities and may also include ambient air pollution from transportation thoroughfares, garbage stations, livestock, and any other noxious and hazardous land use.<sup>53</sup> Toxic exposure is certainly the most simplistic and easily understood example of the way at-risk communities face environmentally related health risks. The exposure paradigm is not, however, the end of the story; other variables weigh heavily into the equation.

In conjunction with toxic exposure, from the outset some communities face a greater risk of suffering that exposure than others due to their unique "exposure pathways."<sup>54</sup> Exposure pathways are certain practices or characteristics, often linked to socioeconomic status, background, or culture, which amplify a community's rates and levels of toxic exposure. One such example is the practice of subsistence fishing among indigenous peoples of certain Asian and Pacific immigrant communities in the United States.<sup>55</sup> These communities embrace the world view that man must coexist with nature, and one way individuals choose to live this view is by fishing for their food instead of buying it in a supermarket.<sup>56</sup> The problem, however, is that the depressed socioeconomic status of many of these populations leads to subsistence fishing not in the pristine waters of a picturesque mountain stream but in contaminated urban rivers and harbors, where fishing can be more easily and cost-effectively executed.<sup>57</sup> This exposure pathway, therefore, exposes these low-income and minority populations to environmental toxins that other communities need not face.

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51. *See id.* at 62.

52. *Id.*

53. *See id.*

54. *See id.*

55. *Id.* (citing Mary Arquette et al., *Holistic Risk-Based Environmental Decision-Making: A Native Perspective*, 11 ENVTL. HEALTH PERSP. 259 (2002)).

56. *Id.*

57. *Id.*

A further example of the way exposure pathways augment toxic exposure is seen in the behavior known as “pica.”<sup>58</sup> Pica refers to the habit among hungry and malnourished children of eating dirt or paint chips for sustenance.<sup>59</sup> This is an exposure pathway unique to a particular socioeconomic standing; well-nourished children do not tend to exhibit this behavior and therefore do not bear the unique exposure risks to the toxins found in dirt and paint. A population’s unique exposure pathways thus play an integral role in determining the level and nature of the group’s environmental health risks.

Another important factor to consider is a population’s inherent sensitivity to certain toxic substances. Inherent sensitivities often play a pivotal role in determining a community’s overall environmental health risk.<sup>60</sup> A heightened sensitivity to a pollutant, for example, can virtually negate any benefit (e.g., lower exposure level) that would otherwise be realized from a community’s greater distance from the pollution source.

Factors affecting a population’s sensitivity to pollutants can be divided into two classes: intrinsic factors and acquired factors.<sup>61</sup> Intrinsic factors are innate and include characteristics such as age, sex, genetics, race, and ethnicity.<sup>62</sup> Acquired factors are more external and include things like access to health care, fitness, nutrition, drug and alcohol use, and the presence of chronic medical conditions in the population.<sup>63</sup> It is crucial to remember that each community facing the hazards of toxic is not created equal. All populations have their intrinsic and acquired differences, and these differences play a very important role in determining the magnitude of the risks posed by environmental hazards.

In addition to exposure pathways and inherent sensitivities, another stark reality contributes greatly to the dangers minority and low-income communities face from environmental toxins: the existence, and abundance, of “toxic hotspots.”<sup>64</sup> Toxic hotspots are areas where multiple pollution sources are closely clustered near one another.<sup>65</sup> If, for example, a community is in close proximity to one pollution source, as many low-income and minority communities are, it is also very likely to

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58. *Id.*

59. *Id.*

60. *See, e.g.,* Ken Saxton, *Sociodemographic Aspects of Human Susceptibility to Toxic Chemicals: Do Class and Race Matter for Realistic Risk Assessment?*, 4 ENVTL. TOXICOLOGY & PHARMACOLOGY 261 (1997).

61. *See* Lee, *supra* note 2, at 61-62.

62. Saxton, *supra* note 60, at 261.

63. *Id.*

64. *See* Lee, *supra* note 2, at 62.

65. *Id.*

be near one or more other pollution sources.<sup>66</sup> This is a relatively new topic of research in the environmental justice field, yet studies have already conclusively documented the prevalence of the toxic hotspot phenomenon.<sup>67</sup> Adding insult to injury, toxic hotspots exponentially compound the plight of communities already vulnerable to the effects of toxic exposure.

Finally, a community's social vulnerability is another factor affecting its population's environmental health risk.<sup>68</sup> Social vulnerability refers to a community's inability to organize and take a stand, politically and socially, to prevent environmental injustice.<sup>69</sup> Many of the communities most severely affected by the hazards of toxic exposure are not able to socially or politically organize to the extent necessary to bring about meaningful change.<sup>70</sup> For various reasons low-income and minority community members often find it difficult to participate in political decision making processes concerning their environment.<sup>71</sup> Factors such as elevated crime rates, low voter registration levels, unstable social institutions, and inept or corrupt political decision makers contribute to a net loss in social capital.<sup>72</sup> Social capital refers to the strength of relationships among a community's decision-making institutions (e.g., the electorate; local, state, and federal government agencies; politicians; etc.).<sup>73</sup> Low social capital, therefore, directly and substantially hinders a community's capacity to combat environmental injustice.

#### *D. Moving Forward*

One important implication of the research on environmental justice is the fact that a narrow-minded focus only on pollution control is not an effective solution.<sup>74</sup> Pollution prevention and control is certainly vital to the success of the environmental justice movement, but scientists, scholars, and policy makers must look further into the issue. A community's well-being is not a simple, one variable input-output equation where health improves as pollution decreases. Social,

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66. *See id.*

67. *Id.*

68. *Id.*

69. *Id.*

70. *See id.*

71. *See id.*

72. *See* Manuel Pastor Jr. et al., *Which Came First? Toxic Facilities, Minority Move-In, and Environmental Justice*, 23 J. URB. AFF. 1 (2001).

73. *See id.*

74. *See* BULLARD, MOHAI, SAHA & WRIGHT, *supra* note 35, at 3.

economic, and cultural factors must also be examined. More research into these less tangible, less accessible pieces of the puzzle is greatly needed. Without exploring social, economic, psychological, and cultural variables, the United Church of Christ's 2027 report is destined to echo some of the same frustration contained in its 2007 study.

One example of an important and burgeoning area of research in the environmental justice movement concerns the concept of the "built environment" and the way architects, city planners, sociologists, and others can engineer healthier, safer, and more just cities.<sup>75</sup> The built environment consists of man-made surroundings, ranging from large-scale cityscapes to personal private spaces, which provide a setting for human activity.<sup>76</sup> Some commentators hypothesize that because low-income communities are more likely to be situated near noxious environmental hazards, those communities are not conducive to activities that could enable them to offset adverse the biological effects of toxic exposure (e.g., exercise, healthy eating, etc.).<sup>77</sup> Examination and design of the built environment presents an opportunity to address these problems by constructing man-made environments that encourage healthy activity.

Building on the concept of the built environment, this Comment argues that the relationship between the environment and *crime* is far too often overlooked by environmental justice researchers. On a social scale, communities with high rates of crime tend to suffer the effects of low social capital.<sup>78</sup> Crime, therefore, further compounds adverse health effects of toxic exposure by crippling a community's ability to fight back against the decision-making institutions that exposed it to environmental hazards in the first place. Furthermore, if we view health outcomes not just biologically but also psychosocially, crime then becomes a *social* toxin adversely affecting *psychological* health outcomes. From this perspective, a built environment that fosters high levels of crime in low-income or minority communities is just as iniquitous as a system that disproportionately locates toxic waste facilities in these areas. The relationship between crime and the environment, therefore, is an important concern in the fight for environmental justice.

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75. See Bullard & Wright, *supra* note 6, at 221-24.

76. See *id.*

77. See *id.*

78. See Avi Brisman, *Crime-Environment Relationships and Environmental Justice*, 6 SEATTLE J. FOR SOC. JUST. 727, 727-28 (2008).

## III. THE CRIME-ENVIRONMENT RELATIONSHIP

Environmental justice researchers, working under a holistic definition of the environment, have only recently begun to examine the interplay between crime and the environment.<sup>79</sup> The holistic environment includes traditional aspects of the natural environment in addition to “the physical or built environment, [which includes] variable aspects of a location or site such as its design, use, or . . . management.”<sup>80</sup> By definition, therefore, a holistic conception of the environment expands the boundaries of the environmental justice movement in innovative directions. The crime-environment relationship is one such example.

Studies of the interplay between the environment and crime historically focused primarily on crimes perpetrated by mankind that adversely impacted the environment: so-called environmental crimes.<sup>81</sup> The environmental justice movement, however, offers a new perspective. Instead of focusing only on environmental crimes, a burgeoning body of research is now exploring the ways the environment causes or influences individuals to commit crime. Especially relevant is the way this dynamic plays out in the low-income and minority communities historically linked to the environmental justice movement and its call for social justice.

While research into the relationships between the environment and crime is largely nascent, three distinct subfields are beginning to emerge in the academic literature. The first of these is called “environmental criminology.”<sup>82</sup> Environmental criminology refers generally to the spatial aspects of crime: where, when, and how a crime takes place.<sup>83</sup> The second emerging subfield is called “crime prevention through environmental design” (CPTED).<sup>84</sup> The field of CPTED is concerned with examining criminal behavior and developing strategies to influence a potential offender’s psychological calculus when deciding whether or not to perpetrate a criminal act.<sup>85</sup> The third emerging area of research examines the effect of parks and outdoor spaces (so-called “green space”) on criminology and criminal psychology.<sup>86</sup>

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79. *See id.*

80. *Id.* at 760.

81. *Id.*

82. Sean E. Michael, R. Bruce Hill & Diane L. Zahm, *Environmental Factors Influencing Auto Burglary: A Case Study*, 22 ENV’T & BEHAV. 368, 369 (2001).

83. *Id.*

84. *See* Edward H. Ziegler, *American Cities, Urban Planning, and Place-Based Crime Prevention*, 39 URB. LAW. 859, 860 (2007).

85. *See* Brisman, *supra* note 78, at 761.

86. *See* Michael, Hill & Zahm, *supra* note 82, at 370.

This is by no means an exhaustive list of the growing number of subfields of the crime-environment relationship. It does, however, offer a summary glimpse at the most promising and rapidly developing areas of academic exploration. More research is certainly needed, but the ball is rolling in the right direction. Further research into environmental criminology, CPTED, and the effect of green space on crime is sure to open new doors and pose many new questions.

A. *Environmental Criminology*

The field of environmental criminology leads the charge into the untraveled frontier of the crime-environment relationship. In fact, so comparatively substantial is the body of environmental criminology research that researchers often erroneously use the phrase when referring to the entire body of crime-environment research. Environmental criminology, however, is indeed a distinct field of study, one which is narrowly focused primarily on the spatial aspects of crime.<sup>87</sup> Environmental criminology captures not only the who, what, when, where, and how of a crime, but also explores the ways in which the presence or absence of opportunities to commit crimes affect those elements of the criminal calculus.<sup>88</sup> At its very core, environmental criminology “posits that . . . potential [criminal] offenders consider situational features or cues to the perceived risk of being caught and adapt their behavior based on the opportunities and risks provided by each setting.”<sup>89</sup>

In one notable case study, researchers Sean E. Michael, R. Bruce Hill, and Diane L. Zahm examined the relationships between the crime of auto burglary and the urban park environment in Washington, D.C.<sup>90</sup> The researchers focused on how the commission of a crime follows a predictable pattern that can be distilled into a series of behaviors.<sup>91</sup> In the case of auto burglary, the pattern breaks down into seven distinct behavioral acts: (1) the “select” act, where the burglar identifies a target vehicle; (2) the “approach” act, when the burglar approaches the vehicle to further inspect; (3) the “perpetrate” act, when the burglar breaks into the vehicle; (4) the “escape” act, when the offender flees the scene with his stolen goods; (5) the “examine” act, when the burglar examines and sorts his stolen goods; (6) the “discard” act, when the burglar discards

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87. Brisman, *supra* note 78, at 760-61.

88. *See id.*

89. *Id.* at 761.

90. *Id.*

91. *Id.*

some of the useless items removed from the vehicle; and (7) the “cache” act, when the burglar stows his retained stolen goods.<sup>92</sup>

Their research revealed that environmental characteristics exhibited a strong influence on opportunities to commit auto burglary in the urban park setting.<sup>93</sup> Environmental characteristics, such as how a park is patrolled, what features surround the park, and how the park is accessed (e.g., by street, path, or parking lot) all contribute to the who, what, where, when, where, and how of auto burglary.<sup>94</sup> Research suggests that before committing a crime, a potential criminal offender internally weighs the costs and benefits of committing each of a given crime’s distinct behavioral acts based on her assessment of the environmental characteristics present.<sup>95</sup>

The auto burglary case study illuminates some interesting environmental features that affect the criminal calculus. More research is needed, however, to identify other environmental characteristics that influence crime. Once these are identified, research will then be necessary to identify the precise ways that each environmental characteristic encourages or discourages crime and the way these effects vary from place to place (e.g., urban, suburban, or rural) and from crime to crime (e.g., auto burglary, narcotics distribution, or assault). Once researchers arrive at a more complete picture of the environmental criminology paradigm, lawmakers can devise strategies for law enforcement, community organizers, and others to use this knowledge to prevent and combat crime. Because high crime is so effective at depressing social capital and discouraging community involvement, implementing effective environmental criminology strategies could result in safer and healthier communities in which community members take a more active role in political and social decision-making processes. This is a particularly pressing concern for low-income and minority communities, many of which face almost insurmountable odds in their struggle to combat the blight of crime.

### *B. Crime Prevention Through Environmental Design*

Another area of recent interest to researchers of the crime-environment relationship is the field of crime prevention through environmental design (CPTED). Building on the platform of environmental criminology, CPTED seeks to design environments that

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92. *Id.*

93. *See id.*

94. *Id.*

95. *Id.*

will prevent and discourage crime.<sup>96</sup> CPTED generally addresses four distinct aspects of crime prevention.<sup>97</sup> First, CPTED seeks to increase physical security by employing measures designed to control access to places where crime may occur.<sup>98</sup> This could include, for example, the treatment and security of doors and windows and the use of alarm systems.<sup>99</sup> Second, CPTED focuses on broad-scale security, which includes the planning and prediction of physical movement, interactions in physical spaces, and opportunities for surveillance.<sup>100</sup> Third, CPTED involves strategies to increase physical security through planning and design of community control and policing activities.<sup>101</sup> And finally, often overlooked but vitally important, successful CPTED depends on neighborhood social planning and community education.<sup>102</sup>

Also known as “place-based” crime prevention, CPTED is especially relevant in the context of low-income communities. Many urban housing projects, for example, suffer strikingly high levels of crime and social decay.<sup>103</sup> CPTED strategies offer a potential solution to this problem by preemptively confronting crime before it happens, rather than addressing it retroactively after a crime occurs. Retroactive crime prevention (e.g., sending a criminal offender through the criminal justice system) tends to foster social decay and arguably does little to deter future crime; whereas preemptive crime prevention averts these problems entirely. Furthermore, CPTED strategies are not only applicable to housing projects and multiunit residential complexes. Other sectors that could benefit from CPTED include shopping malls, entertainment centers, tourist areas, civic centers and plazas, public parks and playgrounds, pedestrian trails and sidewalks, parking lots, and automated teller machines.

Despite its relative infancy and the many questions that remain unanswered, there exists a substantial body of research and investigation into several settled realms of CPTED application.<sup>104</sup> The first of these concerns the concept of access, ensuring that persons have safe movement and connections in public places.<sup>105</sup> Access issues can be

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96. *Id.*

97. Ziegler, *supra* note 84, at 860-61.

98. *Id.*

99. *Id.*

100. *Id.*

101. *Id.*

102. *Id.* at 861.

103. *See id.*

104. *Id.* at 863.

105. *Id.* at 865.

addressed by a variety of strategies, including: (1) ensuring that clear routes exist for different modes of traffic; (2) ensuring that multiple exit routes are provided in public spaces; and (3) providing that those exit routes prevent potential criminal offenders from unnoticed access to pedestrians, especially at night.<sup>106</sup> The second realm of established CPTED application deals with issues related to surveillance and sightlines.<sup>107</sup> This includes strategies like using fences, lighting, and surveillance cameras to provide for good citizen visibility.<sup>108</sup> A third topic of CPTED research concerns site design.<sup>109</sup> This involves ensuring that architectural layout provides for safe movement and eliminates areas where crime could potentially occur.<sup>110</sup>

A fourth strategy in the CPTED arsenal, one which integrates elements from several of the other CPTED realms and on which there exists a considerable body of research, is the strategy of “target hardening.”<sup>111</sup> Target hardening tactics seek to block or reduce opportunities for crime to occur simply by making the perpetration of those crimes more difficult.<sup>112</sup> Some examples of target hardening include: increasing in-person and automated surveillance, increasing visibility, reducing hiding places, using and maintaining alarm and intrusion detection systems, instituting active community policing, posting visible security personnel, and instituting community crime awareness programs.<sup>113</sup> Because it integrates elements of access, surveillance, and site design, target hardening is often thought of as less an individual CPTED strategy and more an overarching CPTED philosophy. Despite these different interpretations, however, the fact remains that target hardening measures have proven highly successful in deterring crime.<sup>114</sup>

As a cautionary note, it is important to be aware that CPTED is not a one-size-fits-all solution. Any community inclined toward using CPTED strategies must first evaluate its population’s individual needs and identify the unique obstacles it faces before deciding on a place-based crime prevention strategy. With more detailed research into CPTED techniques, and greater community involvement in selecting and

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106. *Id.*

107. *Id.*

108. *See id.*

109. *See id.*

110. *See id.*

111. *Id.* at 868.

112. *Id.*

113. *Id.*

114. *Id.*

applying those techniques, the potential for effective implementation of crime prevention through environmental design is promising.

### C. *Green Space*

A third, and especially interesting, subfield of the crime-environment relationship concerns the concept of “green space.”<sup>115</sup> Green space research examines the role of parks, outdoor spaces, and vegetation in shaping and influencing crime.<sup>116</sup> This is a burgeoning area of research, and one that has so far yielded interesting, but conflicting, results.<sup>117</sup>

Some research indicates that green space in the urban environment actually promotes crime. Researchers Sean E. Michael, R. Bruce Hill, and Diane L. Zahm explained this by remarking that green spaces have “the potential to be important . . . crime locations because they serve as gathering places and pathways between daily activities.”<sup>118</sup> Furthermore, some vegetation such as large bushes, wide tress, and tall grasses, enables a perpetrator to conceal herself before and after commission of a criminal act.<sup>119</sup> Additionally, green space can provide convenient opportunities for offenders to inconspicuously survey their intended victims and to discard unwanted articles used in the commission of a crime after the criminal act is completed.<sup>120</sup> As a consequence of these findings, some policy makers and law enforcement personnel actively advocate for a reduction of green space as a means to reduce crime.<sup>121</sup>

Other research, however, suggests a different conclusion. Researchers at the Human-Environment Research Laboratory at the University of Illinois at Urbana-Champaign, for example, have discovered that green space can indirectly lead to an overall reduction in criminal activity.<sup>122</sup> These researchers found that even “unspectacular green spaces (such as high-canopy trees, low shrubs, and grassy areas) can attract people outside, [thereby] positively affecting good mood and attitudes, . . . fostering higher levels of social cohesion in the community,

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115. See Brisman, *supra* note 78, at 762.

116. *Id.*

117. *Id.*

118. See Michael, Hill & Zahm, *supra* note 82, at 370.

119. See *id.*

120. See *id.*

121. See Brisman, *supra* note 78, at 762.

122. See, e.g., Rebekah Levine Coley, Frances E. Kuo & William C. Sullivan, *Where Does Community Grow?: The Social Context Created by Nature in Urban Public Housing*, 29 ENV'T & BEHAV. 468 (1997).

decreasing domestic violence, and reducing crime.”<sup>123</sup> This research thus reveals the flip-side of the green space coin. While urban parks and green spaces can potentially facilitate crime in some respects, green space also plays a very important role in bolstering community well-being, a principal factor in reducing crime.

More research on the effect of green space on criminology is certainly needed before drawing firm conclusions on the role of green space in the crime-environment relationship. Such research will help policy makers determine whether the net effect of green space on crime is positive or negative. That is, whether the reduction in crime that results from a bolstered sense of community well-being outweighs the negative implications of crime facilitation.

#### IV. CONCLUSION

The quest for environmental justice unifies the seemingly disparate concepts of environmental law and social justice into one consolidated crusade. The environmental justice movement, forged over twenty-five years ago by the blood, sweat, and sacrifice of the Warren County protesters, however, is still in a state of relative infancy.

The environmental justice movement began as a way to expose and combat health-related inequities resulting from disparate impacts of toxic waste exposure on minority and low-income communities. The movement’s vision, however, inevitably broadened to encompass much more. The environment not only affects the physical health of mankind, but also its social and psychological well-being.

Innovative research into the way the environment shapes and affects crime rates and criminal psychology is one example of the cutting edge research at the forefront of the environmental justice movement. Just like the PCBs in Warren County, crime too is a toxin, a social toxin for which low-income and minority communities bear the greatest burden. The crime-environment relationship and its application to the pursuit of environmental justice offer promising new avenues for these communities to secure their right to “a clean, *safe*, and healthy environment.”<sup>124</sup>

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123. See Brisman, *supra* note 78, at 762.

124. Kadree, *supra* note 21, at 45 (emphasis added).