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How Neighborhoods Influence Health: Lessons to be learned from the application of political ecology

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AIM

This paper articulates how political ecology can be a useful tool for asking fundamental questions and applying relevant methods to investigate structures that impact relationship between neighborhood and health. Through a narrative analysis, we identify how political ecology can develop our future agendas for neighborhood-health research as it relates to social, political, environmental, and economic structures. Political ecology makes clear the connection between political economy and neighborhood by highlighting the historical and structural processes that produce and maintain social inequality, which affect health and well-being. These concepts encourage researchers to examine how people construct neighborhood and health in different ways that, in turn, can influence different health outcomes and, thus, efforts to address solutions.

Keywords

Neighborhood; Political ecology

1. Introduction

> "… there's the air quality, you have some of the highest rates of asthma in the state [of California], they're right there in West Oakland, so you have the particulate matter coming from the trucks in West Oakland, and so these advocacy groups were really instrumental in forcing the truckers to go to cleaner diesel-type vehicles, and it became a statewide thing but that really got started in West Oakland."
>
> "… when you talk to people in the community the first thing they will tell you is there's two different schools of thought about how you address gun violence. A lot of folks, especially if you're above [live above interstate highway] 580 will tell you,

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you need more police, if you have more cops then everything will stop. A lot of people below 580 will tell you we need more programs and services and we need jobs. And so the council is trying to balance those two requests…"

"And then the last one is the whole job things, right, that's your ultimate prevention… this is just me anecdotally, in 2000, 2004, 2005, 2006 when the economy was doing really well, the amount of crime and the amount of drug-dealing went down. Why? Because people were working. I was driving with a friend of mine on 71st. Street and East 14th Street and pointed out a spot and said 'that used to be the biggest dealing spot right there!' and I said 'but there ain't nobody out there!' She says, 'exactly, they all got jobs!' Came back 4 years later, economy had tanked, she says 'aw look, the boys are back!' So even though there are those who say there's no direct correlation, I say the majority of folks wanna work. I've been in meetings, and the first thing people say is 'I wanna job, I don't wanna go back'."

The District Councilmember from Oakland, California, United States, who was interviewed as a part of a preliminary study on neighborhood health in Oakland,[1] explains a multiplicity of struggles to respond to social and environmental degradation and its link to the health and well-being of neighborhood residents. This is not a unique story, but one that is repeated in urban environments across the United States. Many people are looking for a place to live that is affordable, safe, and accessible to necessary amenities like work, school, grocery stores, and public transportation. At the same time, people desire a home that has access to nature, such as parks, and gardens, a neighborhood that is both socially and environmentally healthful.

This paper aims to highlight the ways the theoretical perspective of political ecology[2] can be useful in expanding work on neighborhood and health. Specifically, political ecology helps us understand how everyday life experiences are situated, and constructed by structural forces. These forces directly and indirectly impact neighborhood social and physical environments influencing the health of residents. And, in turn, the health of residents affects their abilities to mobilize, to gather together and use existing or get new resources to address and change the structural forces at work. We articulate how the social science framework of political ecology can expand health researchers' conceptualizations of mechanisms that make neighborhood characteristics important for health. Political ecology argues that because neighborhood environments are the products of historical, social, political, and environmental processes, the effects of those environments on our health cannot be transformed without addressing the underlying structural processes that gave rise to and sustain those neighborhoods. Political ecology offers such an opportunity because it provides a theoretical context to question the impacts of power, race, and class on how individual health is created or degraded.

[1]In the summer of 2015, 11 undergraduate students, two graduate students and Tendai Chitewere conducted a one day neighborhood audit of six Oakland neighborhoods. The next day, six teams of students conducted semi-structured informal interviews with the councilmember who represents the neighborhood they visually surveyed. The quote above is a response from the district councilmember representing one of the six Oakland neighborhoods studied.

A growing body of research documents associations between neighborhood physical or built environments and health outcomes (e.g. green space and its benefits (Wolch et al., 2014). Social characteristics of neighborhoods, such as collective efficacy (Sampson et al., 2002; Sampson and Raudenbush, 2004), have also been investigated with similar findings with respect to health behaviors and health status (Diez Roux, 2007, 2008; Auchincloss et al., 2008; Black and Macinko, 2008; Chaix, 2009). While for the sake of brevity we confine our discussion mainly to considerations of the physical or built aspects of neighborhood, we are very mindful that our discussion has a wider significance. Thus, whenever we use the term "neighborhood environment," we are referring to both the physical and social characteristics of that space. So far, these epidemiologic investigations have proceeded without a "system of hypotheses" that describes the mechanisms involved in the neighborhood-health relationship (O'Campo, 2003). Without clear articulations of theory, there is a lack of direction regarding how to examine the complex relationship between neighborhood and health (Macintyre and Ellaway, 2000, 2003; Frohlich et al., 2001; Sampson et al., 2002; O'Campo, 2003; Cummins et al., 2007). The inability to discern mechanisms from (primarily) cross-sectional research hampers the translation of these results into health policy because any such intervention will be based on insufficient understanding of the underlying causal processes at work. As research on neighborhood-health effects continues, we argue for renewed attention to under-explored mechanisms and processes that connect places to health. We need a robust framework that theorizes how neighborhoods are socially and historically constructed; this will enable us to think about the health effects of such wide-ranging phenomena as segregation and racism, economic exclusion and mass incarceration, to name a few. All of these social structures are disproportionately spatially patterned. A full understanding of neighborhood-health connections must be able to theorize the causal pathways through which such phenomena become geographically concentrated and unevenly distributed. These complex and historically rooted ills impact the well-being of residents today in part because they shape the ecology of the place they call home. In this paper we present one theoretical framework that deepens neighborhood-health research: We offer *neighborhood political ecology* as a useful frame to examine some of the under-explored impacts of the neighborhood on health. By neighborhood political ecology we refer to the varied components of the places people live, including the social, cultural, economic, political and environmental history and present engagements. Neighborhood political ecology therefore takes an interdisciplinary and multi-sided approach to examining neighborhoods, especially as they intersect with health.

To explore the role of theory in general and political ecology specifically, we have organized this paper into four sections. First, we present an overview of concepts that support our arguments as they relate to health in neighborhoods. Second, we introduce political ecology as a useful theoretical lens to view gaps in neighborhood-health research, and show how political ecology offers alternative concepts through which to advance understanding of the complex ways place affects health. Neighborhoods have been typically characterized in the neighborhood-health literature in two ways: One focuses on the demographic composition (people) in the neighborhood as an influence on the other factors (e.g. living among a high concentration low-income households or unemployed residents). The other examines the influence of the physical or built environment (e.g. green space, parks, food stores) on

residents and their health. Third, we detail those mechanisms generally examined in current neighborhood and health research, and point to significant gaps that impinge on addressing structural change. Finally, the choice of a particular theoretical framework influences the framing of the research question, and vice versa. We present neighborhood political ecology as a framework that can guide neighborhood-health research by linking health outcomes to sources of economic, political, and ecological inequality.

We aim to be clear and concise in these explanations; however, we are cognizant that the meaning of any given concept is often debated within fields, and across disciplinary boundaries. We hope our discussion of the value of neighborhood political ecology serves to illustrate how theoretical concepts and processes can provoke attention to under-investigated questions that target structural inequality and disparities in policy-oriented and practice-based solutions in neighborhood-health research. We begin by outlining some central concepts and debates in social theory that we feel are particularly useful and then place those ideas in a political ecology perspective.

2. Theory in Neighborhood-Health Research

One of the central debates scholars engage in about society is the question of whether people have agency. Do individuals have the ability to determine their own outcomes, or are people informed, enabled and confined by social structures beyond the control of the individual. Social scientists generally agree that the world is socially constructed and that this world is embedded within historical contexts of power and domination. By *socially constructed*, we mean that the world as we know it is created by social structures (kinship, religion, economics or educational institutions), cultural practices and routines, actions, and the meanings that those hold for us (Berger and Luckmann, 1999). Physical structures often bear the markings of those cultural norms. For example, the segregation of people into distinct communities was often done by building highways that served as literal barriers. As described by the councilmember, interstate highway 580 is a major road infrastructure that functions to physically and socially divide a neighborhood. Those structures, institutions, and practices that are dominant, esteemed and deemed to hold social, political, or cultural power mutually reinforce and reproduce each other. This social reproduction takes the form of established norms and practices such as the ability and practice of buying a home in a wealthy neighborhood in order that the children can go to a better funded school. This becomes a subtle way geography and social segregation contribute to generational inequalities. It is these social practices and their interpretations that mediate our interactions with one another and (re) construct relationships, institutions and power dynamics that comprise society today. We generally recognize that social change is not only possible, but inevitable (though not always consciously intentional) as individuals and collective agents carry out their everyday lives.

Agency refers to the idea that individual people are conscious actors with the ability to create ideas and produce their social world. In this process, people engage with the positions they occupy through a reflexive, interpretive process. For example, people are bestowed a biological sex when they are born. However, the organization and social relationships among groups based on sex will influence the individuals' interpretation and enactment of gender.

Ideas on how to be a man are different in various historical times, social settings, age cohorts or ethnic groups. *Structure* refers not only to the built environment, but also to identities, organizations and locations (neighborhoods) that not only have histories, but those histories are socially constructed.

The concept of structure versus agency forms a foundation upon which relevant questions in neighborhood-health research can be asked. For example, does structure affect individual choice or is individual choice affected by the structures that are in place? Are people consuming energy dense and low nutrient foods (framed as an issue of agency) because there are no grocery stores in their community (a structural issue), or are grocery stores and government policymakers not investing in the community (structure) because they believe people do not want to consume fresher or healthier foods (agency)? In neighborhood-health research, structures such as the location of grocery stores, sidewalks, green space, streets and highways can have the effect of not just separating people physically from each other (segregation), but of making it difficult to adopt a healthful lifestyle by walking and being able to purchase fresh fruits and vegetables (Gregory, 1998; Wolch et al., 2014).

History is an important force shaping the way we understand and encounter the present moment. Agency is conditioned by the historical moment in which one resides as well as the history of structural positions and environments in which people conduct their activities. In neighborhood-health research understanding the histories of power through the analyses of the social institutions, relations among groups, and other social phenomena can shed light on why communities are the way they are at any present moment. Knowing the economic, political, and environmental history of a neighborhood, and attending to how that history is shaped by power relations, can help to understand the context of social and environmental transformation that occurs in the neighborhood over time. This is at the heart of political ecology. For example, the history of forced migration of slaves from various African countries to the Americas in general and the US South in particular, fundamentally shapes the present experience of people living in contemporary United States. Bayview Hunter's Point, a predominantly African American neighborhood on San Francisco's West side was created as black families moved west to find employment in government jobs at the Navy Shipyard (Ginwright and Akom, 2008). Housed in public housing the residents were, and continue to be, low-income, surrounded by toxic industrial waste from the nuclear missiles produced there, and physically isolated from the rest of San Francisco by the freeway. Not surprisingly, Bayview Hunters Point has one of the nation's highest incidences of breast cancer (Glaser et al., 1998; Brahinsky, 2014). The available resources and services in inner-city neighborhoods with predominant African-American residents reflect the conditions that created them, a consequence of a violent migration history. This history is often overlooked when considering neighborhood influence on health. In a different, but equally relevant example, we tend to forget that much of the American Southwest was part of Mexico until the 1848 Treaty of Guadalupe. This history is important because in parts of New Mexico and along the Texas-Arizona-California border there are families who identify and still live in ways that are seen by the dominant culture as Mexican, yet as Mexican -Americans these communities have been in the US for over four generations. Although their physical features and language are similar to more recent immigrants, they are very different in their social location and health outcomes when compared to recent Mexican farmworkers in the same

locales. Immigration to the United States changed in the early 19th century from being mainly people of European descent to being people from Asian countries in the late 19th and early 20th centuries. Exploration of the American West, the advent of railroads, expansion of agriculture, development of factories and mining in the mid-West, and the discovery of gold spurred this change. Later, in the 20th century, the US experienced an increase in migration from Latin America, especially of agricultural workers. These shifts in immigration resulted in new cuisines, places of worship, changes in architectural form and location. Establishments such as banks, grocery stores and schools that were once segregated by ethnicity now advertise and provide services in languages other than English. After the civil rights movement in the 1960's, and the public policies it produced, such as an end to redlining (housing discrimination), some urban centers became crowded with – to some residents -undesirable newcomers. White flight ensued. Whites and the businesses that catered to them moved into suburbs taking important resources and leaving inner-cities desolate and starved for economic investment (Gregory, 1998; Williams et al., 2010). The nature of the economy also changed from being basically a manufacturing economy to one based on service industries and, by the 21st Century, electronic technologies. This national shift changed the landscape of neighborhoods, contributing to what we see today - in blighted urban neighborhoods such as in Detroit, Michigan that include urban "food deserts" (Fairfax et al., 2013). Historical process actively shapes the present. While the history of residential segregation is well documented by other disciplines, we are suggesting that it be explicitly invoked when undertaking public health research that studies neighborhood's influence on health. We would benefit tremendously, for example, from examining the cultural history of African Americans in urban cities and question how that history might impact on current morbidity and mortality rates due to cardiovascular and other chronic diseases in their communities (Shim, 2014; Dubbin et al., 2016). Historical trauma is a relevant concept that refers to collective trauma which is experienced over generations. Originally developed and applied to American Indian and First Nation communities, the concept has also been applied to African American experiences, institutional racism, and health consequences (Heart and DeBruyn, 1998). For example, Harrell (2000) identifies six racism-related stressors that impact health and well-being including "racism-related life events, vicarious racism experiences, daily racism microstressors, chroiccontextual stress, collective experiences of racism, and transgenerational transmission of group traumas" (2000:45). Mays et al. (2007) note that despite decades of effort to eliminate health disadvantage in African Americans, racism and racial discrimination is believed to be at the heart of persistent health disparities in African Americans.

A corollary of the notions of both history and that the social world is constructed is that things could be otherwise, that any such social world can be – and is - constructed and reconstructed in different ways by different groups. Social order is dynamic and emergent; it is contingent on the actions of group members to be replicated or altered. Attention to history examines the documented changes that occur at the material level. *Social change*, a related concept, deals more with the processes of cognition and interaction that occur to bring about material level change. Social change is an important aspect to consider in neighborhood-health research because it forces researchers to assess temporality in the neighborhood and in people's lives; it asks that we attend to the give-and-take of diverse

viewpoints in order to understand the processes by which an outcome becomes established and recognized. That neighborhoods change historically is clear. But attention to social change permits us to see that they are even different throughout a single day. For example, a neighborhood with commercial activity during the day may feel welcoming, but at night the same area might be a hub for drugs and prostitution, and thus perceived as dangerous by mainstream residents and passersby.

In political ecology, the *neighborhood* could be conceptualized as the most convenient place to acquire both material and ideological resources in order for residents or visitors to the neighborhood to maintain their physical and emotional well-being. The World Health Organization (WHO) Primary Health Care Declaration at Alma Ata conference (1978) "strongly reaffirms that health, [is] a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" (World Health Organization, 1978). Abilities and needs are contingent and specific to each individual and her situation; therefore, the states of physical and mental health needed would be different for different individuals. The ability to obtain necessary resources rests in part on one's structural position in society and the resources available to a person in that position. A low-income, undocumented immigrant who suffers from rheumatoid arthritis may lack the monetary resources to treat her condition, may not (or believe she may not) be eligible to receive publicly funded medical services, and may not have the physical stamina or ability that would enable her to traverse a broadly defined neighborhood territory to reach services. By not having the means to receive formal care, she may develop limited physical mobility, jeopardizing her ability to work. However, living close to a health center that provides free or sliding-scale services for vulnerable populations may mitigate her structurally imposed lack of access to the customary health care system.

Thus far we have shown that concepts central to a political ecology perspective not only underlie health outcomes for residents in specific neighborhoods, but also expand our understanding of the processes through which such outcomes arise and could be ameliorated. These concepts include agency, social construction, social structure, power and domination, discrimination, history, and social change. These social, political and environmental conditions produce outcomes that disproportionately impact the health of residents in a neighborhood. That is, if a community experiences discrimination because they are assumed to be immigrants despite being fourth generation US citizens, they may exhibit personal stress as well as be perceived as having limited political power to have environmental pollution laws enforced in their neighborhood, exposing them to high levels of carcinogens. In what follows, we discuss how theory can expand our understanding of *neighborhood* and *health*, and in particular, how it can help inform inquiry into how inequality emerges, is expressed, and experienced.

3. Political ecology

Emerging out of political economy, political ecology broadly focuses on the relationship between political and economic structures and institutions, and environmental resources (Robbins, 2004). The development of the political ecology as a theoretical lens has been well documented (Greenberg and Park, 1994; Bryant and Bailey, 1997; Swyngedouw and

Heynen, 2003; Robbins, 2012), but a brief overview is worth mentioning here because this progression demonstrates how political ecology theory can be both versatile and adaptive to developing a framework for understanding neighborhoods and health (Mayer, 1996).

The earliest reference to 'political ecology' appears in the title of a short article in the newsletter *Science Service* by biology editor Frank Thone (Thone, 1935). It gained wider use in the 1970s after the anthropologist Eric Wolf (Wolf, 1972) used it to conceptualize the relationship between land ownership and local ecosystems. Political ecology came of age in the 1980s as an interdisciplinary group of scholars began to critically analyze the impact of development around the world, especially in the global south. Geographers like Raymond Bryant (Bryant and Bailey, 1997) called for careful scrutiny of large institutions like the World Bank and multinational corporations, as essential to understanding local and global cultural and environmental degradation. Thus political ecology merges cultural ecology (the analysis of people, their way of life and their physical environment) and political economy (the examination of the unequal distribution of power and wealth in a society) to create a complex picture of the conditions and relationships that impact how we live with each other and with the natural environment. Most scholars would argue that political ecology thus emerged to address what was considered an apolitical, and largely ahistorical, environmentalism. Instead of blaming local communities for over grazing or unsustainable farming practices, political ecologists began critiquing the cumulative historical, political and economic structures like forced migration, corporate take overs, and violence (Peluso and Watts, 2001) that directly or indirectly lead to unsustainable practices. Political ecology is therefore closely tied to environmental injustice, that is, waste and polluting industries' unequal targeting of neighborhoods populated by people of color, recent immigrants, and low-income households (Pellow and Brulle, 2005). With its fundamental concern with political and ecological inequality and the violence, explicit and implicit, immediate and long-term, that such inequalities produce (Peluso, 1994; Keil, 2003; Chitewere, 2010), political ecology can help us understand the root causes of what is not visible or may not be obvious.

The interdisciplinary nature of this field that includes anthropology, sociology, political science, biology, ecology, and geography, provides a plethora of insights into addressing the role of the social and physical environment in producing and maintaining health inequality. While neighborhood-health research typically investigates either "social" environment (e.g. perceived safety, ethnic enclaves, behavior norms) or "physical" or "built" environment (e.g. sidewalks, parks, aesthetics), political ecology shifts our understandings of — and the empirical questions we articulate around — how place ultimately intersects with health. The expansion of neighborhood-health research with the articulation of political ecology encourages research to explore the structural relationship between politics, economics, the natural environment, social position, and ideologies in understanding why neighborhood disadvantage persists. For example, Quesada et al. (2011) approach health disparities through the lens of structural vulnerability, specifically, that certain groups like undocumented Latinos experience social, economic, and legal barriers to seeking treatment. The unequal distribution of material and ideological resources perpetuates social stratification of minority groups by government agencies, corporations, and political leaders, while the general population legitimates these inequalities by adhering to established social

and economic hierarchy. Political ecology expands this understanding to account for the environment in social inequality as well as social inequality in the environment. This is especially evident when we examine neighborhoods and health.

4. Neighborhoods and health

It is helpful to outline some of the conventional ways neighborhood characteristics are understood to influence health. Research had typically considered the neighborhood insofar as it provided an environment for disease transmission and as a target for disease prevention. For example, understanding how infectious diseases such as yellow fever, small pox, and influenza spread, led to the formulation of the environment-agent-host model and subsequently public sanitation infrastructure and health policy including vaccines.

As prevalence of chronic disease increased, public health's focus on health-related behaviors and risk factors shifted the discipline's attention to considering the neighborhoods' influence on diet, physical activity, safety, and well-being. The last three decades have seen a growth in research on how neighborhoods influence health behaviors and health outcomes. The definition and conceptualization of neighborhood as a physical locale, however, is fraught with difficulty. Boundaries of a neighborhood have often been based on government and publically generated borders, such as census tracts or zip codes, which are arbitrary geographic units. In contrast, political ecology suggests that neighborhood boundaries are created by, and given shared meanings through social processes. These processes draw on historical precedents or defining incidents or changes. While streets, highways, and structural ideology like redlining, divide and define a neighborhood, qualitative research reveals that residents themselves are also engaged in defining their own neighborhood boundaries. In recent decades, more attention has been paid to the nuanced way residents within a physical space use, understand and define their community or neighborhood. The geography of neighborhoods has been useful when it delineates boundaries, and highlights structural inequality like racism, violence, and environmental degradation. But it can also signal unseen boundaries of identity, stress, resilience, emotion (love or rivalry), exposure to diverse risks, and disease (asthma or heart disease), as well as a host of ecological changes like soil quality, tree canopy, and micro-climates.

What has emerged from these co-evolving research topics is that place matters for health and that place can, and should, include both the social dynamics of interactions as well as the interplay of the physical landscape, the natural environment with the social relationships in that space. Neighborhood-health research is engaged at the intersection of these two growing fields of inquiry.

Neighborhood-health research has generally utilized theoretical concepts from a positivist sociological perspective, which broadly analyzes the study of social phenomena through scientific quantitative methods. These concepts include: norms (Sampson et al., 2002), collective efficacy (Sampson et al., 1997; Sampson, 2003), social cohesion (Durkheim, 1951/1897), social disorganization (Shaw and McKay, 1942), and various forms of social control (Ross and Jang, 2000; Ross and Mirowsky, 2001; Sampson and Raudenbush, 2004) as it relates to neighborhood disorder (Sampson, 2009). These concepts approach the social

world by examining how social order is maintained via collective norms, values, and beliefs that people share and the common behaviors they are socialized to practice.

One of the frequent mechanisms examined in neighborhood-health research is collective efficacy. According to Sampson (2009), collective efficacy assesses social cohesion via the collective norms of shared expectations for control and civic engagement held by neighborhood residents (Sampson, 2009). For example, if there is high collective efficacy in a neighborhood, it is more likely that residents will respond (by calling the police, for instance) to a crisis if they witness a robbery occurring in their neighborhood than if their collective efficacy is low. Neighbors believe they can collectively maintain the safety of their neighborhood. Another major hypothesis is that assessed “neighborhood disorder” leads people to have negative perceptions of their neighborhood (Sampson, 2009). These negative perceptions reduce collective efficacy and the overall perception of both the residential neighborhood and personal well-being. Cohen et al. (2003) found that decrepit conditions in neighborhoods mediated socioeconomic disadvantage on all-cause premature mortality, that is, broken windows, litter, graffiti, and abandoned buildings signal to residents and nonresidents that neighborhood disorder is tolerated, despite any opposition that individual residents might voice. The authors suggest that the disorder signals a metaphorical and in many cases an actual danger to the residents. In consequence, they keep isolated, find that businesses do not consider locating in these areas and they have fewer, possibly more expensive, consumer choice (such as no access to nutritious food if supermarkets will not operate in this neighborhood). Decrepit conditions thus contribute to the retreat of established facilities and constrained access to needed services and amenities.

This area of inquiry has advanced neighborhood-health research by highlighting the role of norms and social order. However, there has been little elaboration regarding how people in neighborhoods learn these norms, how criteria for acceptable norms are structurally established (Musick et al., 2008; Fabio et al., 2011) and reinforced, or how social environments shape the kinds of norms that tend to prevail. Understanding the processes through which norms are established or learned could identify how such norms might be changed. For example, we can explore what framework promotes positive practices in neighborhood interventions that increase social cohesion and reciprocity, improve self-perceived health, and reduce mental health problems, drug abuse, or injuries related to violent crimes. Neighborhood norms are culturally diverse (Body-Gendrot, 2009) and, particularly in the US, are often entangled with histories of racialized discourses (James et al., 2012). Browning and Cagney (2002), sociologists, investigated concentrated disadvantage and immigrant concentration in Chicago. Applying social disorganization theory, they investigated whether the concentration of social problems in a neighborhood could be associated with poor health. Recent studies comparing whether ethnic enclaves are associated with better health outcomes that tend to gather residents who are racially and socially more homogeneous, in contrast to segregated neighborhoods which can be associated with lower access to economic opportunity and poorer health outcomes. Neighborhoods which often emerge through processes of exclusion, illustrate these concepts in play. Kershaw and Albrecht (2015) reviewed the literature investigating cardiovascular disease and found that the majority of studies of black segregation showed higher segregation was related to higher CVD risk; but the evidence linking segregation and health

among Hispanics, who may be more likely to reside in what might be called ethnic enclaves, was more mixed and appeared to vary widely by factors such as gender, country of origin, racial identity, and acculturation. Moreover, in the case of collective efficacy, maintaining social order in a neighborhood will not necessarily prevent or reduce exposure to other kinds of neighborhood-level risks, such as environmental toxins, or increase neighborhood-level resources, such as health care services, economic opportunities, or political power. That is, the social processes that lead to the geographic distribution of resources and risks are often historically lengthy and complex, and often intertwined with those processes that produce low collective efficacy or social order. Thus a deeper connection to other social theory might raise different research questions and shed light on institutional and structural forces at play that transcend individual or neighborhood norms.

We argue that thinking about neighborhood effects on health through the lens of political ecology can generate a deeper understanding of - and be a good framework for – how we might expand the focus of our research from an immediate focus on disease outcomes or poor health behaviors, to include examination of the structural inequalities and underlying mechanisms that mediate and moderate these outcomes. This could manifest in a couple of directions. Qualitative methods could be used to document natural histories of economic and intuitional structures in neighborhoods (e.g. local government infrastructure investments). Similarly qualitative methods could elaborate the individual experiences of political ecology processes and how these processes affect individual experiences of neighborhoods over time and then translate these experiences to survey questions. The survey questions could be asked of residents in order to study population health effects.

5. Neighborhood political ecology

The focus of neighborhood-health research is not only to examine the uneven distribution of physical and social resources among neighborhoods, but to explore how the physical environment of a neighborhood is socially constructed and acts as a medium through which health or illness is constructed, maintained, and experienced in the everyday life of residents. A person’s structural position in society like their race or immigration status not only influences the neighborhood context s/he is situated in, but can exacerbate or mitigate that neighborhood’s effects on their health.

Understanding these interrelated political and ecological factors can provide the context needed to reverse long-term structural inequalities. That is, it is necessary to take into account how the above structures impact where one takes a walk and gets exercise, what challenges lie in the way of seeing a physician regularly, or how a canopy of trees along residential road brings down stress. Including a social theoretical lens in epidemiological and other public health research can shape where we look to make interventions.

Neighborhood-health research, even that conducted recently, has only very rarely considered the relationships between inequality, the social and physical environment, capital, and health. For example, in a search of 364 articles published in 2012–2014 on neighborhood-health (sampled from a total of 1170 articles identified by Oakes et al. (2015) published 1990–2013), none invoked the term “political ecology,” and only three used the related term

"political economy." These three articles invoked the latter term to refer to the underlying conditions that shape the built environment and in turn health behaviors, for example youth sexual risk behavior in South Africa (Burns and Snow, 2012) and risks exposure to airborne carcinogens in Louisiana (James et al., 2012).

Political ecology would bring a historical and structural element to these risk behaviors, exploring the complex nature of how our health is connected to our past and the physical place the past has brought us. These appearances were significant because they hint at the underlying conditions for inequality in the built environment of neighborhoods and youth sexual risk behavior in South Africa (Burns and Snow, 2012) and cancer risks from air pollution in Louisiana (James et al., 2012). Political economy is implicitly discussed in research examining the relationship between racial residential segregation and health (Pellow and Brulle, 2005; Allen, 2010). However, the explicit application of a political ecology framework would further probe resource distribution across different municipalities. Among other issues, political ecology could examine the motivations of politicians and business executives behind the economic decisions that consequently affect health and well-being, in both our social and physical environment. For example, Moore and Diez Roux (2006) reported fewer supermarkets and more liquor stores in low-income neighborhoods than in high-income neighborhoods. They did not delve into other pertinent topics, such as differentials in applications for supermarkets by neighborhood or relationships between city planners' approval rates of supermarkets in disadvantaged neighborhoods and the rates of chronic illness related to diet or excess alcohol consumption in those same neighborhoods. At the same time, we cannot ignore the benefits of access to reliable transportation can have for those who do not live near a market. Yet these processes are precisely the questions that the political ecology perspective raises. It seeks to expand the empirical lens beyond an examination of, for example, residents' responses or the overall socioeconomic demographics of their neighborhood, and instead assess mechanisms linking politics, economics, and environmental resources that produce the current state of disadvantage.

Extending the example above, qualitative inquiry could ascertain the motivations of the city planners, multinational corporations or local grocers, and neighborhood residents to examine the root causes of a halted or slowed establishment of grocery stores in their neighborhood. In neighborhood political ecology, new questions about the relationship between the lack of grocery stores and obesity, or degraded sidewalks and hazardous street crossing can have a much more extensive and comprehensive analysis than is currently offered. A neighborhood political ecology can help to reveal unexpected outcomes. In summer 2015 eleven undergraduate students interviewed six of the seven elected council members who represent Oakland communities. While our initial interview questions focused on connections between neighborhoods and health, the council member from another district spontaneously explained the complicated and interconnected relationship between race/ethnicity, geographic location, social class, health, and the environment. Through qualitative interviews, prostitution and illegal dumping rose as central problems his community was confronting.

> "Go on YouTube and go on Oakland sideshows [organized or spontaneous gatherings where drivers demonstrate their skills of automotive spinning, to a

> crowd of onlookers. These events began in East Oakland in the early 1980s], they're all [in] the area we're talking about. And uh, so it's just crime, uh, you know the cleanliness of the city… we have the cleanup efforts every Saturday and during the week. We're connected with every school and we have a date where kids come out to clean around their school so the neighbors can see, they meet the neighbors… just want to be able to help, 'cause you know illegal dumping happens. So business folks are not moving to our area to establish jobs in East Oakland… so we gotta get to that so we're bringing in different businesses so we can get people hired." (District Councilmember)

The problems of street crime, illegal dumping, low morale, and creating a sense of community can be tied to the lack of businesses and employment opportunities. While another councilmember expressed concern over sideshows and crime in their community, they also mentioned the value of the natural environment.

> "Creeks are a really great experience for kids to get them to realize the impact that we have on the environment, that sort of thing, there are a lot of people who grew up in Oakland who are really dedicated to bringing the creek system back and repairing it, so our environmental division here and in public works is working on a lot of projects to bring that creek back and restore it." (Councilmember).

The deep and complex experience of residents cannot be gleaned from US Census data, nor inferred from survey responses from residents in the neighborhood. Without theory in neighborhood-health research, we can miss the structures in patterned ways people are affected by their environment and vice versa. Neighborhood political ecology thus contributes a more comprehensive picture of the interrelated forces that reveal the historical and present examinations of local politicians' engagement with the neighborhood, residents' civic engagement, and the ties between corporations, local funding and political decisions in the neighborhood. Thus the goal would be to uncover those multiple relationships that created health inequality and disadvantage in the first place. Although political economy sets the stage for considering structural inequality and its consequences based on social class, political ecology builds on political economy by adding the crucial dimension of nature. That is, along with social class, where we live and our relationship or access to the natural environment can have an impact on our health and well-being.

6. Conclusion

This paper set out to articulate how frameworks within social theory—specifically, political ecology—can expand our understanding of the structural mechanisms at work between neighborhoods and health. We focus on how our current thinking in neighborhood-health research can be further interrogated and even problematized using political ecology. In so doing we can uncover gaps in the literature, note unexamined research questions, and identify the under-examined, deeper historical nature of how neighborhoods come to be, and how they come to shape health.

Through the lens of political ecology, we found that the processes that sustain social stratification and inequalities were often absent in the research linking neighborhood

disadvantage to health. Therefore, we stand to gain rich information from additional mechanisms and frameworks that could be assessed in the relationship between neighborhood disadvantages and health. These considerations include the persistence of structural inequalities through political decision-making, ecological composition including proximity to parks, institutions within the neighborhood, and economic development within the neighborhood as well as demographic characteristics of residents and shifts in this over time. When examining 'neighborhood' as a socially constructed space and 'health' as holistic and inclusive of our social and physical environment, we can discern what activities people do to construct neighborhoods and accomplish subjective perceptions of well-being, mechanisms presently unexamined in the literature linking neighborhoods and health.

We urge researchers to enhance and enrich their present endeavors with consideration of these established lines of inquiry and by incorporating other theoretical approaches that help get to the historical and structural influences on health. Specifically, by adding concepts and approaches from political ecology that can better address some current gaps in the repertoire of research that links neighborhood and health.

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