



Immigration, mobility, and environmental injustice: A comparative study of Hispanic people's residential decision-making and exposure to hazardous air pollutants in Greater Houston, Texas



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ABSTRACT

The themes of immigration and mobility have not been adequately examined by environmental justice (EJ) scholars. This study addresses that gap by clarifying factors shaping Hispanic people's residential decision-making and their associated exposures to cancer risks from Hazardous Air Pollutants (HAPs) in Greater Houston, Texas. In-depth semi-structured interviews were conducted with 29 Hispanic householders who had previously completed a structured survey, which was representative of Greater Houston's population. Our research design enabled data collection from immigrant and United States (US)-born Hispanics living at high and low risk to HAPs. By using a comparative qualitative analysis approach to examine divergent experiences of Hispanic subgroups, we advance from the monolithic treatment of the US Hispanic population reflected in the extant EJ literature. Our findings reveal that key determinants of high HAP risks included economic constraint on residential locational options for both US-born and immigrant Hispanics, and attraction to sociocultural benefits in co-ethnic enclaves among immigrants in particular. In contrast, protective factors differed entirely between US-born and immigrant Hispanics. For US-born participants, the experience of upward-and-outward sociospatial mobility – coupled with detachment from the Hispanic community – generated lower HAP risks, while the experience of living in social isolation within a less-than-ideal rental unit was protective for immigrants. The pernicious, multiscalar nature of environmental injustice experienced by Greater Houston's Hispanic immigrants is encapsulated by the fact that their pursuit of affordable and comfortable residential settings at the household level contributes to the reproduction of their collectively disproportionate HAP exposures.

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Introduction

Environmental justice (EJ) studies have demonstrated that low-income and racial/ethnic minority groups are disproportionately exposed to urban environmental risks (Bullard, 1990; Brown, 1994; Linder et al., 2008; Mohai et al., 2009). However, the EJ literature suffers from limitations we address here. First, while quantitative studies provide evidence for the inequalities that certain social groups face, they cannot explain the processes that produce distributional patterns of environmental injustice. Qualitative research methodologies, less often utilized in studies of distributional environmental injustice, can reveal the workings of micro

and macro processes in the production of unequal risks, as well as the mechanisms underlying the quantitative findings that orient much of the empirical literature on EJ (Ragin et al., 2004). Second, there has been a tendency to categorize Hispanic populations into one homogenous group (for exceptions, see Collins et al., 2011; Grineski et al., 2013). By making assumptions of within-group homogeneity, EJ analysts have failed to clarify how race and ethnicity intersect with other axes of social inequality in contributing to unequal risks. Third, EJ research has not adequately examined the roles of (im)migration and mobility among racial/ethnic minority groups in the production of unequal risks.

To address these limitations, we used qualitative methods to examine pattern-process linkages in the production of distributional injustices by focusing on the role of residential decision-making processes among Hispanic groups living at relatively high and low risk to Hazardous Air Pollutants (HAPs) in the Houston, Texas Metropolitan Statistical Area ("Greater Houston" henceforth). Quantitative research has demonstrated that the Hispanic

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population of Greater Houston suffers disproportionately from environmental injustices associated with HAP exposures (Sexton et al., 2007; Linder et al., 2008; Chakraborty et al., 2014; Grineski et al., 2014). For example, as the proportion of Hispanic residents in Greater Houston neighborhoods increased, the level of HAP exposures increased significantly, even after accounting for socioeconomic status (Grineski et al., 2014). By clarifying the factors influencing residential locational decisions among Hispanic people that fundamentally shape their exposures to cancer risks from HAPs, this study aims to contribute to the existing EJ body of knowledge, which has surprisingly little focus on migration and mobility (for exceptions, see Crowder and Downey, 2010; Grineski and Collins, 2010; Schoolman and Ma, 2012; Raddatz and Mennis, 2013).

We address the following questions:

- Why do Hispanic immigrants and US-born individuals of Hispanic descent in Greater Houston live in areas with relatively high levels of outdoor exposure to HAPs?
- What factors have led Hispanic people to and kept them living within areas at relatively high risk to HAPs?
- What factors are protective for Hispanic people who live in areas at relatively low risk to HAPs?

Migration, mobility and environmental justice

While academic research on EJ has continued to progress, immigrant communities (and topics of migration and mobility more generally) have been under-emphasized. Only a handful of spatial EJ studies have analyzed immigrant populations, and most of those have done so quantitatively based on variables associated with immigrant status available in census datasets (Hunter, 2000; Ma, 2010; Collins et al., 2011; Viel et al., 2011; Schoolman and Ma, 2012). Findings relevant to Hispanic immigrant communities show statistically significant associations between linguistically-isolated households and both large quantity waste generators and proposed Superfund sites (i.e., uncontrolled or abandoned hazardous sites that are on the National Priority List for remediation (USEPA, 2014)) in the US (Hunter, 2000). This indicates that disproportionate risks are associated with immigrant presence and a lack of English-proficiency – factors not emphasized sufficiently in EJ research. Thus, more research is needed to improve understanding of forces that contribute to increased exposure to toxic environments among immigrant populations. This study addresses this need by focusing on the mobility experiences and decision-making of Hispanic residents in Greater Houston, and by distinguishing between the experiences of immigrants and those born in the US.

While there is a need for more careful examination of migrant populations and mobility in the EJ literature, emphasis on these themes among EJ scholars coalesced in the 1990s (then dissolved in the early 2000s) with the “chicken-or-egg debate”, which focused on “*which came first, the disadvantaged racial/ethnic minority population or the toxic hazard?*” (Been, 1994; Anderton et al., 1994; Pastor et al., 2001). The “chicken-or-egg” debate superficially focused on the temporal sequence of events leading to unequal risks for minority groups. The underlying premise was that claims of environmental racism could be evaluated by determining whether toxic facilities had been disproportionately constructed in minority communities or if minority populations had selectively migrated to areas with already operating facilities. It was assumed by some scholars that disproportionate siting indicated the possible existence of racism while minority move-in pointed toward ‘market dynamics’ as explanatory. At a deeper level, the debate exposed competing perspectives on how racism operates in society (e.g., via intentional acts or historical-geographical suffusion throughout institutions in society) and

how causality in socially disparate patterns of exposure to risks should be evaluated (Pulido, 1996). Due to the polarizing nature of the debate, the focus on mobility and migration in EJ research was largely abandoned. EJ scholars, who typically adopt normative positions, tend to avoid conducting research that can be harnessed by others to support erroneous interpretations regarding racism’s absence and/or justice’s presence. Empirical studies that document racial/ethnic minority group movement and settlement within the production of environmentally unjust urban landscapes are amenable to erroneous interpretations, based on the logic that “minorities are *not* being discriminated against in the siting process or housing market; they are *choosing* to live in neighborhoods that already host facilities” (italics in original) (Taylor, 2014: 86).

The “chicken-or-egg” debate exhibited similarities with the context vs. composition discussion among health geographers, which focused on the relative importance of place-based structural features (contextual) vs. individual people’s characteristics (compositional) in shaping disparate health outcomes. An important difference is that the context vs. composition discussion yielded synthesis, whereas the “chicken-or-egg” debate did not. Through the context vs. composition discussion, health geographers deemed it necessary to examine both contextual features and compositional characteristics (Phillimore and Morris, 1991). In other words, consensus emerged that taking into account the structural features of places and the attributes of people were both important for studying health disparities (Smith and Easterlow, 2005). We assert that EJ scholars should follow suit and recognize the importance of examining both contextual and compositional factors that influence the production of unequal environmental risks. A premise of this study is that EJ scholars cannot limit inquiry based on the problematic “chicken-or-egg debate” any longer, and must resume examination of the roles of mobility and migration as compositional processes that articulate with structured inequalities in shaping sociospatial patterns of environmental injustice. Thus, goals of this study are to reinvigorate the dialogue on migration and mobility in EJ research as well as highlight the unjust risks faced by immigrant populations within metropolitan America.

Environmental injustice in Houston, Texas

Greater Houston is the sixth largest Metropolitan Statistical Area in the US with a total population of 5.9 million (2010). According to the 2010 census, Hispanics comprised 35% of the population, non-Hispanic whites, 40%, and non-Hispanic blacks, 17%; nearly 80% of Greater Houston’s Hispanics are of Mexican-origin. Hazardous Air Pollutants (HAPs) are a significant health threat in Greater Houston because it is home to the world’s largest petrochemical complex and notorious for being the ‘plan-less’ city due to its lack of zoning laws (Feagin, 1988; Linder et al., 2008). Health problems attributable to HAP exposures in Greater Houston have been well-documented (Whitworth et al., 2008; Lupo et al., 2011; Scheurer et al., 2014).

There is a body of EJ work demonstrating environmental racism in Houston, which for the most part has focused on blacks/African Americans (Linder et al., 2008; Bullard, 1996; Vojnovic, 2003). Others have questioned the existence of environmental racism in Houston (see Been, 1994; Yandle and Burton, 1996; Denq et al., 2000), either by highlighting methodological inconsistencies in prior studies or through ‘market forces’ arguments highlighting the movement of poor (and incidentally) minority populations into hazardous areas subsequent to industrial establishment. Following Pulido (1996), we assert that answers regarding whether people or a pollution source arrive in a given place first fail to provide an adequate basis for substantiating claims of environmental (in)justice. One, these arguments are rooted in a flawed conception of racism

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