Between "broken windows" and the "eyes on the street:" walking to school in inner city San Diego

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A B S T R A C T

While research on active school travel usually focuses on physical activity benefits, this study proposes a conceptual framework to understand children's well-being, cognitive development, and community life associated with walking to school in an inner-city neighborhood. A series of children-centered activities (surveys, cognitive mapping, and focus groups) revealed that students who walk to school develop an acute understanding of their environment and a distinct sense of community.

They feel comfortable with "eyes on the street" of residents, shopkeepers, and patrons but they express discomfort in the presence of "broken windows," i.e. cues of social disorder in the built environment.

Their major concerns are about gangs and crime. Policies promoting walking to school should be responsive to these social milieu aspects and aim at communities' overall well-being rather than focusing just on children's physical health.

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1. Introduction

"Eyes on the street" and "broken windows" are two interrelated concepts that rather poignantly capture the promises and perils of inner-city neighborhoods. Jane Jacobs (1961) advanced the former in her much acclaimed treatise on inner-city urbanism. Through their benevolent surveillance, residents, shopkeepers, and patrons involved in their everyday activities and social interactions create a safe environment for adults and children alike. Some years later, Wilson and Kelling (1982) used the latter to symbolize neglect and abandonment of streets and buildings that in turn promote crime, vandalism, graffiti, and drug dealing. Both concepts pertain to the built environment, hence their currency in the planning and design literature, but they also relate to the social ambience it supports. The juxtaposition of the two concepts suggests a nexus between physical and social environment. It sheds light on the ecology of inner city urbanism as exemplified in this study with the case of a San Diego neighborhood. The use of the term "broken window" in no way should indicate relationships between crime and incivility as initially presumed, and later contested in empirical work (Harcourt, 2009; Harcourt & Ludwig, 2006).

Building on the gaps in the literature on active school travel, the aim of this paper is to advance a comprehensive conceptual framework that revolves around the nexus between built environment and social milieu for analyzing the walking-to-school experience. A mixed-method case study with 135 fifth-graders from the City Heights neighborhood of San Diego supports the argument that walking to school is not only a healthy quotidian routine for children's physical condition; it also contributes to their mental well-being and to building healthy communities. The proposed framework should define the policy context for active living, especially when promoting active school travel for children of inner-city neighborhoods.

2. Literature review and conceptual framework

2.1. Literature review

2.1.1. Built environment, physical activity and obesity

Over the last two decades, research on active school travel has guided public policy with one main goal in mind: mitigating child obesity (Appleyard, 2003; Boarnet, Anderson, Day, McMillan, & Alfonzo, 2005; Dellinger & Centers for Disease Control and Prevention, 2002; Rosenberg, Sallis, Conway, Cain, & McKenzie, 2006; Royne, Ivey, Levy, Fox, & Roakes, 2016; Staunton, Hubsmith, & Kallins, 2003; Stewart, 2011; Trapp et al., 2012; Zhu & Lee, 2009). This approach stems from a large body of public

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health studies exploring the relationships between the built environment, physical activity, and obesity (e.g. Ding & Gebel, 2012). This framework remains the dominant approach to active school travel research, where walking or biking to school are considered specific types of daily physical activity with expected health benefits for children (e.g. Casey et al., 2014; Davison & Lawson, 2006; De Vet, De Ridder, & De Wit, 2011; Dunton, Kaplan, Wolch, Jerrett, & Reynolds, 2009; Faulkner, Buliung, Flora, & Fusco, 2009; Galvez, Pearl, & Yen, 2010; McMillan, 2005; Mendoza et al., 2011; Panter, Jones, & Van Sluijs, 2008; Pont, Ziviani, Wadley, Bennett, & Abbott, 2009; Sandercock, Angus, & Barton, 2010).

However, recent empirical literature in the field of public health finds ambivalent results regarding the effects of active school travel on obesity. Exercise from walking or biking to school may not be sufficiently intense to fulfill daily requirements of physical activity (A. Martin, Kelly, Boyle, Corlett, & Reilly, 2016; Pizarro, Ribeiro, Marques, Mota, & Santos, 2013; Villa-Gonzalez, Ruiz, Ward, & Chilln, 2015). These findings represent a challenge for both fields of public health and urban planning, as there seems to be a need to redefine policy goals for promoting active school travel.

2.1.2. Focus on inner-city children

Children of inner-city neighborhoods constitute a subgroup that has remained largely underrepresented in the literature on active school travel, with only a few exceptions (e.g. Banerjee, Uhm, & Bahl, 2014; Wridt, 2010; Royne et al., 2016). In the U.S. context, the "inner city" typically designates the city's central area characterized by a higher population density than outlying suburbs, a predominantly minority population, lower income households, increased perception of crime, and residents often underserved in terms of goods and services.

There are two main reasons why it would seem particularly relevant to focus on inner-city children's travel behaviors. First, scholars have mostly been interested in the health effects of walking behaviors (Drewnowski & Specter, 2004; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010) and existing research suggests that weight and physical activity are more strongly associated with active school commuting in ethnically diverse and lower income communities (Baig et al., 2009). Second, previous research suggests that children of lower income neighborhoods are more likely to walk to school in a first place, because of the denser nature of such settings, which allows for shorter distances (Kerr et al., 2006; Larsen et al., 2009). According to S. L. Martin, Lee, and Lowry (2007), two-thirds of urban children living within one mile of school are indeed active travelers. The percentage drops to 40 for suburban children. Nationwide, 48% of children between 5 and 14 used to walk or bike to school in 1969; today they are only 13% (Safe Routes to School, n.d.).

It must be noted that walking behaviors of inner-city children have received more attention outside the U.S., especially in Europe (Alparone & Pacilli, 2012; Carver, Watson, Shaw, & Hillman, 2013; Kyttä, Hirvonen, Rudner, Pirjola, & Laatikainen, 2015; Lopes, Cordovil, & Neto, 2014; Shaw et al., 2015a), where, in comparison, inner cities are generally not as impoverished as in American cities, neither economically nor socially.

2.1.3. Focus on mental well-being and cognitive development

The dominant focus on physical health in the existing literature has eclipsed other potential health effects of active school travel, in terms of mental well-being and cognitive development (Appleyard, 2017). Carver, Timperio, and Crawford (2008) asked "Is the outdoor child an endangered species?" This question may not be as relevant in inner-city neighborhoods where, as mentioned above, children most likely walk to school. However, a more pertinent question might be: "Is the inner-city child pedestrian in danger? Is the child's personal development compromised because of the risks and dangers of the neighborhood environment?"

Urban scholars in the 1960s and 1970s argued that growing up in cities is an educative experience, one that is beneficial for children's cognitive development (Carr & Lynch, 1968; Dyckman, 1961; Lynch, 1977; Parr, 1967; Ward, 1978). Recent public health literature emphasizes opposite effects, focusing on health issues associated with exposure to the risks and dangers of urban life from an early age. Boynton-Jarrett, Ryan, Berkman, and Wright (2008) studied a large sample of over 8000 adolescents in the U.S. and found that for each additional exposure to violence, the risk of poor health increases by 38%. Fowler, Tompsett, Braciszewski, Jacques-Tiura, and Baltes (2009) showed that children and adolescents experience the strongest effects of community violence in terms of post-traumatic stress disorder. Using methods of concept mapping, O'Campo, Salmon, and Burke (2009) showed that, in general, poverty and neighborhood problems such as violence, substance abuse, vandalism, crime and gunshots are the main avenues to poor mental well-being; conversely, neighbor friendliness, sense of community and street interactions are important factors for good mental health.

2.1.4. Social milieu and active school travel

The negative aspects of urban social milieu, such as poverty, segregation, crime, cues of crime, and strangers have remained relatively understudied compared to the effects of the built environment on active school travel. After a search on PsycINFO and PubMed databases, only two papers were found focusing specifically on these impacts, both sourced in PubMed (Carver et al., 2008; McDonald, Deakin, & Aalborg, 2010). Carver et al. (2008) place the concept of "stranger danger," i.e. fear of harm from strangers, at the core of their literature review on neighborhood safety and children's physical activity. They highlight the paradoxical notion of "social traps," where parents chauffeur their children to school in order to protect them from traffic dangers they are contributing to create; moreover, their travel behavior contributes to emptying the streets from social interactions on the streets, therefore reinforcing the fear of strangers. McDonald et al. (2010) provide some empirical evidence that parents are significantly more likely to allow their children to walk (or bike) to school when they believe that other adults will watch the streets and monitor the children, i.e. if there are "eyes on the street."

Two other studies find that crime is perceived as a major barrier to walking to school (Foster & Giles-Corti, 2008; Moore et al., 2010). They highlight potential differences between parental and children's safety perceptions. Research on active school travel tends otherwise to look at negative factors of the social milieu as control variables rather than key explanatory variables (e.g. Gallimore, Brown, & Werner, 2011; Hanson, Guell, & Jones, 2016; Kemperman & Timmermans, 2014; Napier, Brown, Werner, & Gallimore, 2011; Rothman, To, Buliung, Macarthur, & Howard, 2014; Yu & Zhu, 2015).

It is argued here that the risks and dangers of the social milieu deserve more attention in the policy landscape of active school travel, because of their potentially large health impacts, especially on children of inner-city neighborhoods who are most likely to walk to and from school (S. L. Martin et al., 2007). Arguably, they are more exposed to crime, and also to the fear of crime, both factors having a negative impact on health and well-being (Lorenc et al., 2012).

2.1.5. "Eyes on the street," "broken windows" and the ecology of the neighborhood

A few studies have addressed—more or less literally—the concept of "eyes on the street" and "broken windows" in relation