Stores and mores: Toward socializing walkability

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ABSTRACT

Walkability remains a guiding framework for practitioners to design vibrant and healthy communities through urban planning interventions. While associations between travel behavior and physical factors in urban form have been confirmed through numerous studies, recent research underscores that focusing on the built environment poorly accounts for the sociodemographic factors bracketing amenity and route choices across space and time. As transportation planning turns toward strategies associated with maximizing accessibility over minimizing travel time, this epistemological gap is problematic for practitioners tasked with reducing structural inequalities in access to opportunity across society. Using participant testimony from a neighborhood in transition, as grounded in a qualitative geographic information system, we develop a user-oriented walkability framework which incorporates social and personal factors mediating pedestrians’ spatial engagement. We advance from this framework to propose non-engineering interventions necessary to facilitate spatial engagement and, in turn, maximize walkable opportunities available to residents.

1. Introduction

Walkability has proven to be a useful framework to foster pedestrian realms that promote physical activity, improve environmental outcomes, and fuel economic development. Yet while there is wide agreement that built factors alone cannot shift pedestrian behavior and, equally important, that pedestrians’ social characteristics impact travel behavior (Adkins et al., 2012; Giles-Corti et al., 2005; Agyeman, 2014). Schwanen (2016a, 2016b) notes that contemporary theory and methods offer rich opportunities to broaden the horizon of transport geography such that policies can be driven by space in all its overlapping scales (neighborhood, street, body) and scopes (built, social, psychological). We can therefore privilege both the physical and social relationships encountered by the pedestrian in determining what constitutes walkable space.

We propose that walkability can, and should, be conceptually adjusted to include social factors shaping travel behavior for two reasons: to more precisely account for travel behavior in the city, and; to maximize the number of potential opportunities for residents to meet their needs on foot, voluntarily and satisfactorily, regardless of their socioeconomic constraints. We review the development of walkability over the past two decades before describing our own user-oriented assessment as implemented in a socially-heterogeneous neighborhood. We outline our formative framework with a case example, which we follow with implications for practice applicable not only to pedestrian planning practitioners, but a broader scope of professions associated with urban governance and social inclusion.

2. Background

Walkability signifies any assemblage of built features whose components statistically associate with the propensity to walk. Amenity access—a latent variable including residential density, land use diversity, and street grid design—explains the greatest variation in mode share (Frank et al., 2008; Handy et al., 2006). Traffic safety factors like pedestrian infrastructure and roadway characteristics play a smaller though significant role (Brown et al., 2007; Giles-Corti et al., 2013). Safety from crime has been linked to walking behavior, though its explanatory power varies depending on pedestrians’ characteristics and experiences (Cerin et al., 2006; Doyle et al., 2006; Foster and Giles-Corti, 2008). Urban design elements that make walking more pleasurable, such as trees for shade and benches for rest, marginally associate with walking behavior (Adkins et al., 2012; Giles-Corti et al., 2005;
Owen et al., 2004). Our understanding of these built features continues
to evolve as researchers use innovative approaches and data to examine
behavior and perceptions (Ewing and Handy, 2009; Neatt et al., 2017).

Geospatial indices and audit instruments incorporating these features
have been found to validly predict travel behavior and associated
outcomes, e.g., moderate physical activity (Carr et al., 2010; Clifton
et al., 2007; Day et al., 2006; Frank et al., 2010), yet their performance
varies depending on pedestrians’ socioeconomic characteristics. Adkins
et al. (2017) review seventeen empirical studies comparing walking
behavior between “advantaged” and “disadvantaged” groups to con-
clude that walkability, as currently conceived, is half as effective at
predicting the walking behavior of disadvantaged groups as their ad-
vantaged counterparts. They relate these results to factors such as dis-
advantaged areas being less walkable, household resource constraints
preventing car ownership, and the notion that disadvantaged areas
have social networks conducive to delegating or pooling tasks, reducing
the number of walking trips per person. These variations extend beyond
socioeconomic disadvantage to age and residential characteristics.
Among middle-aged and older residents in British Columbia, for ex-
ample, the impact of the built environment on travel behavior is mar-
ginal after controlling for physical ability, cognitive ability, and social
interaction (Hirsch et al., 2017). In validating geospatial measures,
Hajna et al. (2013) discover significant mismatch between residents’
own perceptions of crime and the conclusions derived from walkability
algorithms. While some attribute the mismatch between user-based and
algorithmic assessments to misperception on the part of pedestrians
(Gebel et al., 2009), the recurring behavioral differences among socio-
codemographic groups, ceteris paribus, illustrate a need to refine the
conceptual underpinnings of walkability such that pedestrian planning
interventions can be more flexibly tailored to various socio-spatial
contexts.

Transport scholars increasingly consider both built and social fac-
tors as they frame what motivates travel behavior. Overarching socio-
economic structures shape users’ destinations and mobility choices,
from how cultural norms shape gender roles and, by extension, their
everyday behavior in the public realm (Law, 1999) to how inclusionary
social policies counter behavioral differences emerging from market
inequalities to offer more activity and mobility choices for politically-
marginalized groups (Lucas, 2012; Zavestoski and Agyeman, 2014).
Van Acker et al. (2010) underscore the importance of psychological
factors, such as attitudes and preferences, which mediate residential
choices and travel behavior. Riggs (2016), for instance, notes that racial
inequalities in residential walkability throughout metropolitan San
Francisco stem in part from racial minorities’ preferences for affordable
housing in close proximity to existing social networks. Gentrification
alters long-term residents’ perceived right to navigating their neigh-
borhoods, compelling them to adapt by changing their destinations and
routes (Pierce and Lawhon, 2017). Lord et al. (2011) argue that déprise,
i.e., proactively reorganizing one’s activities and expectations as one
ages, allows seniors in suburban neighborhoods to maintain their per-
ceived quality of life despite increasing dependence on others for
transportation and homecare needs. Alfonzo (2005) situates the deci-
sion to walk within a hierarchy of socio-ecological factors, from one’s
physical abilities and household resources to the attractiveness of the
built environment for walking—an approach which continues to inform
the refining of walkability indices for specific populations, e.g.,
the inclusion of eldercare and provincial healthcare clinics in an audit for
Quebec seniors (Negron-Poblete and Lord, 2014).

These advances in framing walking behavior continue, for the most
part, to envision “space” as represented in earlier behavioral studies:
physically static; socially sterile, and; topologically disembodied from
the rhythms of everyday life. Decoupling the built attributes of space
from the social and psychological relationships which mediate indi-
viduals’ engagement with space reinforces the notion that urban form
primarily and independently determines walking behavior. Riggs
(2014) critiques the physical determinism which prevails in active
mobility research as biased toward generalizable trends at the expense
of unique environmental contexts and participant activities, masking
unforeseen causal pathways which are not easily quantifiable. Con-
tending with diminishing returns to attributing travel behavior to the
built environment, Andrews et al. (2012) advocate moving beyond
walkability by turning to the “different forms of embodiment, move-
ment activities...and the experiences, agencies, and cultures” that
broadly influence physical activity (p. 1925). Yet as innovations in
geographic analysis prove increasingly capable of managing multiple
genres and scales of data to investigate complex phenomena
(Schwanen, 2016b), it seems premature to throw the baby out with
the bathwater. But how can we complement the empirical foundations
of built walkability with pedestrians’ social and psychological factors to
more effectively assess spaces for walking?

We turn to social space, a decades-old geographic ontology that
relates physical and social features in comparable terms such that one
would more comprehensively observe the processes shaping everyday life.
Lefebvre (1991) noted that space is primarily social, as its physical
features are conceived and perceived through a human lens while,
concurrently, our actions and ideas constitute a third space there social
relations play out. Pierce and Martin (2015) advance that relational
place-making, i.e., determining the qualities of a space from multiple
and oftentimes contradictory perspectives, illustrates that an area or
feature can have overlapping meanings contingent on social debates and
personal beliefs. Massey (2005) blurs the boundaries of physical and
social features by altogether delocalizing them, asserting that
“space” is not an objective realm but rather the messy aggregate of
countless physical and social differences [i.e., the space between them]
and, as a result of these extensive topologies, that any examination of a
feature’s attributes will only partially reveal its relation to other fea-
tures and attributes.

Walking has featured prominently in social space scholarship since
its inception, typically as a means to demonstrate the complexity of
space at ground level (e.g., de Certeau, 1984), yet it is only recently that
social space has been featured in pedestrian planning research.
Zavestoski and Agyeman (2014) anthologize numerous studies de-
noting how pedestrian planning prioritizes physical investments
without taking into account socioeconomic externalities, such as the
gentrification and displacement which often accompanies neighbor-
hood investment. At the user scale, several studies harness sensory
perceptions through multimedia or pedestrians’ own words to demon-
strate how physical and social factors influence the mobility of in-
dividuals, including pedestrians and joggers (Cook et al., 2016;
Middleton, 2011). Degen and Rose (2012) complement these sensory
perceptions with participant testimony about the past to underscore
how one’s perception of urban design features may depend on place-
based memories. While not directly incorporating social space,
Manaug and El-Geneidy (2013) find that attitudes regarding the en-
vironment and health associate with walking further while commuting.
Our growing understanding of the social factors shaping walking be-
behavior opens a window to incorporate them into contemporary as-
semblages of walkability features.

3. Method

In designing an approach, we sought to examine social factors
shaping pedestrian behavior while retaining the evidence-based con-
clusions behind contemporary walkability instruments. We developed a
two-stage interview procedure whose themes were structured by an
existing audit (Negron-Poblete and Lord, 2014): a one-hour sedentary
interview at a location of the participant’s choosing followed by a one-
hour walking interview along a path chosen primarily by the partici-
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pant with the understanding that the researcher could suggest diver-
sions, with the participant’s permission, to more closely examine fea-
tures discussed during the participant’s sedentary interview. These
diversions preclude our drawing conclusions about participants’ travel
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