

The Complex Role of Urban Design and Theoretical Models of Physical Activity

Kevin J. Krizek

There is considerable enthusiasm among individuals in research, advocacy, and policy circles for the idea that “good” urban design will positively contribute to levels of physical activity. The enthusiasm demonstrated by such perspectives is refreshing; most agree it is critically important to support planning efforts that make physical activity and “active travel” easy, available to diverse and increased populations, and more attractive. At the same time, however, it is important to be aware of the false expectations of such planning initiatives, particularly the potential of urban design, by itself, to strongly influence levels of physical activity. The caution presented below warns us that the magnitude of the independent effect of urban design on physical activity may be less significant once other issues are accounted for.

Ecological Models of Behavior

The primary reason for this caution is guided by theories of behavior from public health but also informed by recent urban planning research about travel patterns. Colleagues from the field of public health provide us with highly disciplined models to guide our understanding of human behavior. A set of theories heavily relied on are referred to as social ecological models. An underlying theme of ecological models is that there are a variety of contexts—individual, interpersonal, organizational and community—that operate at multiple levels to influence action; behavior does not occur within a vacuum. *Environmental contexts* (i.e., urban design characteristics such as street design, mixing of land uses, public spaces, sidewalks, bike lanes) are particularly difficult to pin down because they invoke behavioral decision making on a variety of levels. This draws attention to questioning *how* and *in what manner* our beloved urban designs relate to the multiplicities of human behavior.

Much of the physical activity excitement approaches urban design as a relatively simple intervention operating in transparent manner. Providing environmentally supportive physical environments through good urban design, it is thought, will lead to increased physical activity. This is akin to the

mantra, “if you build it, they will come.” We are learning, not surprisingly, that things are not that simple. Analyzing a single policy or environmental change without fully capturing other important influences may lead to errant conclusions and even overstate outcomes about that policy or environmental change. These premature conclusions hold particularly true for matters related to where people decide to live and work, what they consider supportive urban design, and how they engage in active travel. How these dimensions relate to one another is more suggestive of a tightly spun web that incorporates many factors—trying to unravel that web by isolating and pulling out the urban design thread is a particularly complex endeavor.

Urban Travel and the Complexity of Urban Design in Ecological Models

Consider the battery of recent research examining relationships between urban form and household travel. Findings from this body of research tell us with some certainty that households living in more urban and mixed use communities tend to walk, use transit, or bike more than their suburban counterparts; we know that when suburbanites drive, they are behind the wheel for longer distances than urbanites. This is encouraging news for planners and other environmentalists. But this research does little to inform us about the likely consequences that would result from building more urban and mixed use communities. Why? Because, in part, most of this research to date does not adequately rely on ecological theories of behavior and does not account for the complex manner in which urban design plays out.

Self Selection and Other Factors Influencing Behavior

For example, a primary outcome of urban form-travel research suggests there is a healthy dose (pun intended) of self-selection in who lives in these communities. Residents select locations to match their desire for walking, cycling or transit use to those places more conducive to such behavior. The same holds true for families who move to a neighborhood where they have convenient access to a rail-trail or a walking path—this is an option they prefer to have. This suggests that differences in travel between households with different neighborhood design should *not* be credited to the urban design alone; the differences should be

attributed to self-selection. In other words, people who are likely to walk, choose to locate in a given neighborhood where they have a better chance of engaging in active travel. The behavior from habitual walkers magnifies the environmental effects.

The effects of urban design versus other factors such as attitudes or choice of lifestyle need also to be disentangled. These latter effects are myriad and important; but incorporating them into analysis is complicated because they are so difficult to measure. For this reason these factors too often go not only undiscovered but also unacknowledged! Some factors may come in the form of what statisticians like to refer to as “latent” (or not directly observable) variables. These latent variables relate to concepts such as how we learn our preferences toward travel and/or neighborhoods (e.g., through school, through our parents), the influence of others on our residential decisions (e.g., neighborhood groups, image considerations), our sensitivity to other relevant public policies or services (e.g., schools) or the culmination of each in the form of our overall lifestyle choice. Ecological models suggest that these other and larger factors are significant. The important point is that the relative magnitude of the independent effect of urban design on physical activity may become marginalized once these other factors are accounted for.

Allow me to explain the above in a bit more concrete terms. Efforts to use urban design to induce unwilling auto-oriented, physically inactive households to be more active may be futile for at least two reasons. First, their auto-using behavior may be a function of their overall preference for auto-oriented behavior or certain built environments. These preferences are typically manifestations of the adults since they are driving (again, pun intended) forces behind decisions of neighborhoods and travel patterns, thereby often leaving out the choices or preferences of children. To twist a popular adage, “you can take the family out of the suburbs but you can’t take reliance on the Chevy Suburban out of the family.” Second, it is unlikely that physically inactive households would locate in neighborhoods that prize opportunities for physical activity. This in turn suggests that the success of the “physically active city” may be limited to the relatively small numbers of people who currently live in or would

move to neighborhoods with “physically supportive” urban design. The new urbanists and others suggest that this population is sizable and there is considerable latent demand for such physically active neighborhoods. This may be the case but more evidence is needed.

Necessary But Not Sufficient

“Good” urban design is critically important to the overall health of our cities. A considerable population currently lives in environments that simply do not provide attractive options for active travel. We intuitively know that people have a harder time walking or cycling where opportunities for these options do not exist. Reconciling these instances should be a top priority by creating and enhancing environments where individuals have choices for different modes of travel. Doing so certainly does not undermine other planning objectives by expanding their choice of travel mode.

But while improved conditions may be necessary, they are not sufficient for households to adopt healthy lifestyles. Other factors have equal if not greater importance and thus the “healthy” inquiry into more complex causal links lives on. The effects of such improvements will not be dramatic and so, it is important that we do not overreach our expectations of such interventions. Rather, it suggests that aspiring for the healthy city is a complex phenomenon. To better know the myriad ways in which urban design plays out requires a fuller understanding of how urban design relates to basic preferences, learned behavior, and lifestyles. This knowledge will allow policy makers to promote initiatives that will have a longer lasting affect and create healthier preferences and behaviors overall. A more thorough understanding will therefore assist policy makers to construct better informed policies about our built environment.

Kevin Krizek is an assistant professor in the urban and regional planning program of the Humphrey Institute at the University of Minnesota.