

Pedestrian Environment and Walkability in Tianjin and Beijing, China: A Pilot Study

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Introduction

Walkability is often argued to be a key component of livable or sustainable urban neighborhoods (Forsyth 2015). A key aspect of a walkable neighborhood is an environment experienced as comfortable or suitable by pedestrians. Understanding the experiential dimensions of urban walkability is an imperative for urban designers and planners, particularly in rapidly urbanizing countries such as China.

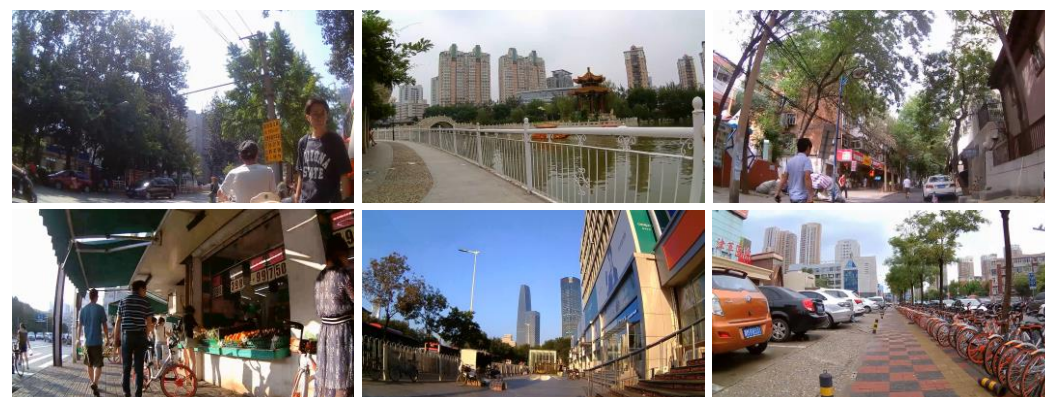
A walkable neighborhood can be conceptualized in terms of the attractiveness or repulsiveness of its components (Helbing and Molnár 1995). To adequately identify these qualities, researchers can examine the actual on-site movement of pedestrians and pedestrians' own evaluations of their movement in relation to surrounding environments (Kelly, et al. 2011).

Methods

Thirteen residents of the cities of Tianjin or Beijing agreed to participate in a two-part activity.

Part 1: Each participant was asked to identify an area of their city with which he or she was unfamiliar, and was taken to a location in that area during daytime hours. The participant had a recording action camera strapped to his or her chest, and, without being given a destination, was asked to go for a thirty-minute walk (漫步) in any direction he or she found desirable. Participants were only asked not to enter buildings.

Part 2: The researcher and each participant simultaneously viewed the video recording of the walk and conducted an audio-recorded discussion. At every point at which the participant either altered their walking route, or could have but chose not to alter their walking route (i.e. a street corner), the researcher asked him or her to identify any reasons (原因) or factors (因素) that caused them to alter or continue their route.



Views from the action camera

Analysis

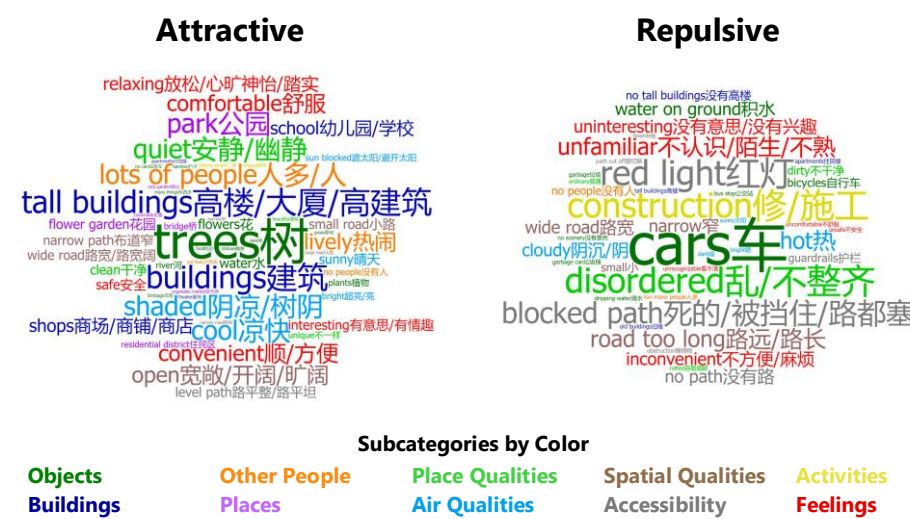
Analysis was conducted on the recorded discussions with participants. Analysis was guided by the principle of 'open coding' (Corbin and Strauss 1990: 423). The only code established at the outset was attraction and repulsion; elements of the walking experience identified by participants as influential on route change or route continuation were grouped together as either attractive or repulsive. As analysis proceeded, elements were further coded and grouped into sub-categories. At the conclusion of analysis, ten sub-categories had been formulated. Results were translated from Chinese to English; in some cases, a single English term was used to translate multiple Chinese terms.

Discussion

Very few specific elements stood out as consistently attractive or repulsive, possibly due to a small sample size. There is a clear preference for trees and buildings and a clear dislike of cars; however, a diversity of elements appeared as both desirable and undesirable.

Participants are frequently attracted to highly visual elements such as objects, buildings, and places. Conversely, participants are frequently repulsed by elements related to accessibility, suggesting that freedom of movement is important. Air qualities, particularly air temperature, and spatial qualities, such as width or narrowness, are also important and are often either attractive or repulsive. Greenery appears to be characteristic of many elements appearing across subcategories. While the presence of other people is often seen as desirable, very few specific human activities appear as either desirable or undesirable.

Results



Most Frequent Elements
(all subcategories except 'feelings')

Attractive		#	Repulsive		#
Trees (树)		11	Cars (车)		10
Buildings (建筑)		7	Construction (修/施工)		6
Tall Buildings (高楼/大厦/高层建筑)		7	Disordered (乱/不整齐)		6
Lots of People (人多/人)		6	Red Light (红灯)		6
Park (公园)		6	Blocked Path (死的/被挡住/路都塞)		5
Quiet (安静/幽静)		6	Hot (热)		4
Shaded (阴凉/树阴)		6	No Way Through (过不去/不随意去/不能通行)		4
Cool (凉快)		6	Road too Long (路远/路长)		4
Lively (热闹)		5			
Open (宽敞/开阔/广阔)		5			

Most Frequent Subcategories
(all subcategories except 'feelings')

Attractive		#	Repulsive		#	Total		#
Objects		29	Accessibility		23	Objects		49
Buildings		24	Objects		20	Buildings		29
Air Qualities		19	Spatial Qualities		12	Air Qualities		29
Spatial Qualities		17	Air Qualities		10	Spatial Qualities		29
Places		16	Place Qualities		10	Accessibility		26

Future Study

The pilot study proved effective in utilizing participants' own movement and language to elucidate and evaluate elements of their urban environments related to walkability. Study methods both give participants a significant degree of influence over their participation and compel them to attend to immediate sensory environments.

Future iterations of the study could utilize an increased sample size to incorporate systematic variation of factors such as weather conditions, times of day, and demographics.

One methodological issue to be considered ahead of future iterations is the basic units of speech or text to be coded, particularly with regard to coding of 'things' and 'qualities' of things (nouns and adjectives). In the pilot study analysis, things and qualities were either kept together (i.e. 'tall buildings') or split apart (i.e. 'quiet' and 'park') on a case-by-case basis. A second issue is the relevance of feelings assigned to environments (i.e. 'relaxing') and their status as subjective or objective.

References

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