



Major issues for biking revival in urban China



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ABSTRACT

China, the former Kingdom of bicycle, is reviving city cycling. Over 100 city governments have invested in public bike systems. Can this government endeavor reverse the declining trend of cycling in urban transportation? Reviewing city governments' bike strategies, the quality of bike infrastructure, and popular ideas for biking planning, we identify three issues. First, the government strategy for bike revival has focused on subsidizing public bike systems, with too few programs and policies to encourage private bike usage. The result is a shift of cyclists from private bike usage to public bike systems. Second, biking infrastructure, including quantity and quality of bike lanes and bike parking, are significantly under-supplied or insufficiently invested. Third, the perception of automobile as an indicator of higher social status persists, even in communities where cycling is the majority mode. Biking revival requires a better cognition of cyclists' right of way by planning professionals and the society at large.

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Introduction

The percentage of urban trips by bike has decreased steadily in the past three decades in China, the once acknowledged kingdom of bicycle (Ruan, 2009). In the past seven years, China's city governments, however, have carried out impressive public bike programs to promote cycling. Stories of how Shanghai, Hangzhou, Wuhan and other city governments have planned and funded their bike systems have been well reported by the media (Lv, 2007; Zheng, 2014b; Zhu & Tang, 2013), which creates an impression of urban bike revival. The statistics, however, point to a different story. Since 2000, cycling's share in urban trips falls at an average yearly rate of 5% (Ruan, 2009). The increasing government input for cycling contrasts with its declining usage. Can current government policy bring a factual revival of urban cycling?

It is worth noting that many factors that once made China a kingdom of bicycle in the past is unlikely to come back. The popularity of cycling was closely partnered with the *danwei* system. The *danwei* compounds were prevalent in China before Deng Xiaoping's economic reforms in the 1980s', when most living, working, and recreational activities were within comfortable

walking or cycling distance. Since late 1980s, the *danwei* system began to dissolve in the process of land and housing reforms, and urban expansion has lengthened trip distance and increased the demand for motorized modes (Yang, 2006). An increase in household income has furthered automobile ownership (Yang, 2010). One would not expect China's urban land use and household income to roll back to what they were thirty years ago.

A bike revival, however, could and should be achieved by some extent with government support and appropriate urban planning and design. Chinese cities are still dense. Automobile congestion in high density built-environment still keeps cycling as an attractive alternative (Yang, Shen, Shen, & He, 2012). In addition, Chinese urban residents, particularly those of relative low income, still benefit from cycling for daily trips. Furthermore, the geographic terrain in many Chinese cities is sufficiently flat for pleasant cycling trips, as long as conditions such as the ambient air quality and road safety can be improved.

In the past years, the deteriorating environment for cycling has been discussed in various studies, including the continuous encroachment of bike lanes by the increasing automobiles (Yang & Gakenheimer, 2007). The mortality stemming from bike-car collision has made cycling vulnerable in reality and the perceived risk in streets full of motorized vehicles has deterred travelers from biking (Liu, Jia, & Cheng, 2012). As automobile ownership becomes an

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indicator of social status, cycling at the same time begins to represent a mode of urban poor. This social perception of biking has its imprint in planning practice. For example, guidance to build bike lanes and relevant bike facilities for a period of time disappeared from the planning and designs codes in big Chinese cities such as Shenzhen (Shenzhen Government, 2014). The insufficiency of investment in and management of biking facilities has its expression in inappropriate use of under-supplied bike lanes, messily parked bikes around transit stops and bike theft (Pan, 2011).

The effectiveness of recent government endeavor on bike revival, therefore, depends on how it can help to improve the physical and social environment for cycling. Have the public bike programs helped to re-shape the social perception of cycling? Has the city government also improved bike lanes and bike parking for private bike usage? Existing research on China's biking planning has focused on the operational models and operational result of public bike programs (Guo & Zhong, 2009; Huang, 2010; Pan, Tang, Mai, Mou, 2010; Zhu, 2012), whose impacts on the planning and design for the urban biking system at large has been overlooked. In order to fill this gap, our paper examines the insufficiency of city governments' bike strategies for maintaining and even recovering healthy cycling in urban China.

Rise of public bike systems

In China, government sponsored bike-share programs emerged in an era of fast motorization (Liu & Guan, 2005) and the movement

for low carbon cities globe-wide (Fuller, Gauvin, Kestens, Morency, & Drouin, 2013). Congestion stemming from rapidly expanding automobile population is pushing large metropolitan cities to try this old-style mobility in a new manner. Government-sponsored bike programs, particularly those in Western Europe, have inspired China's city governments to develop their own versions of public bike systems. Since the first system of such kind began its operation in Hangzhou in 2008, more than 100 cities have hosted such service, which are shown in Fig. 1. The largest systems by number of bikes can be found in Hangzhou (65,000 bicycles), Shanghai (28,000 bicycles), Taiyuan (20,000 bicycles), Weifang (20,000 bicycles) and Ningbo (15,000 bicycles), which are comparable with Paris' Velib (23,900 bicycles) (ITDP, 2014).

These bike systems emulate their counterparts in the developed countries along with some significantly functioning systems of smaller scales around the world, such as the EcoBici system in Mexico City (3600 bicycles) (EcoBici Official Site, 2014), the BiciQ system in Quito (425 bicycles) (BiciQ Official Site, 2014) and the Tel-O-Fun system in Tel Aviv (1500 bicycles) (FSM Ground Service, 2014). Users can pick up a bike in one bike service station and return it at another station, which saves the need to ride the bike back to the original station. It also eliminates riders' concern on bike theft. Trucks are used to move bikes from low-demand service stations to high-demand ones.

The Chinese bike share systems differ from their western counterpart in ownership structure (ITDP, 2013). Bike share systems in developed countries can be owned and operated by the

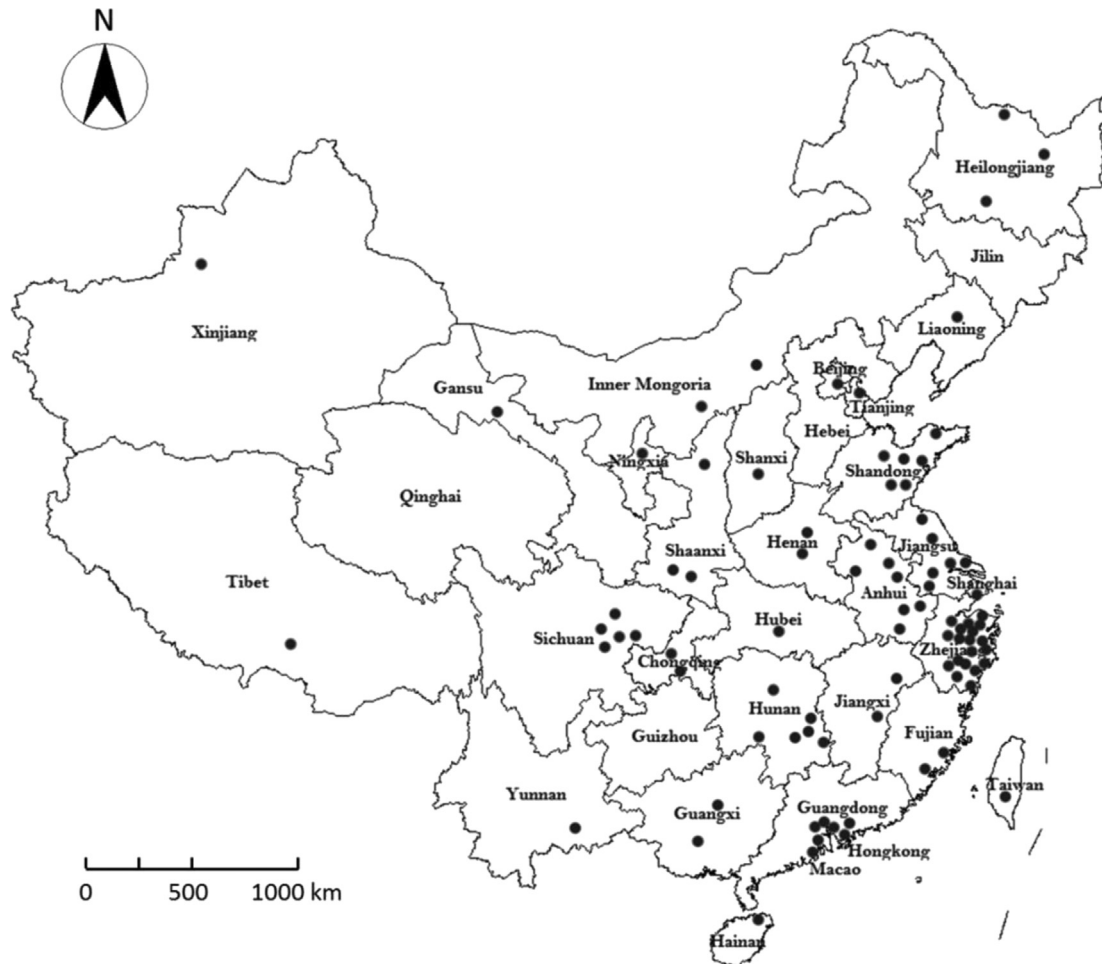


Fig. 1. Cities with public bike share systems in operation. Source: Compiled by authors with news release on internet.

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