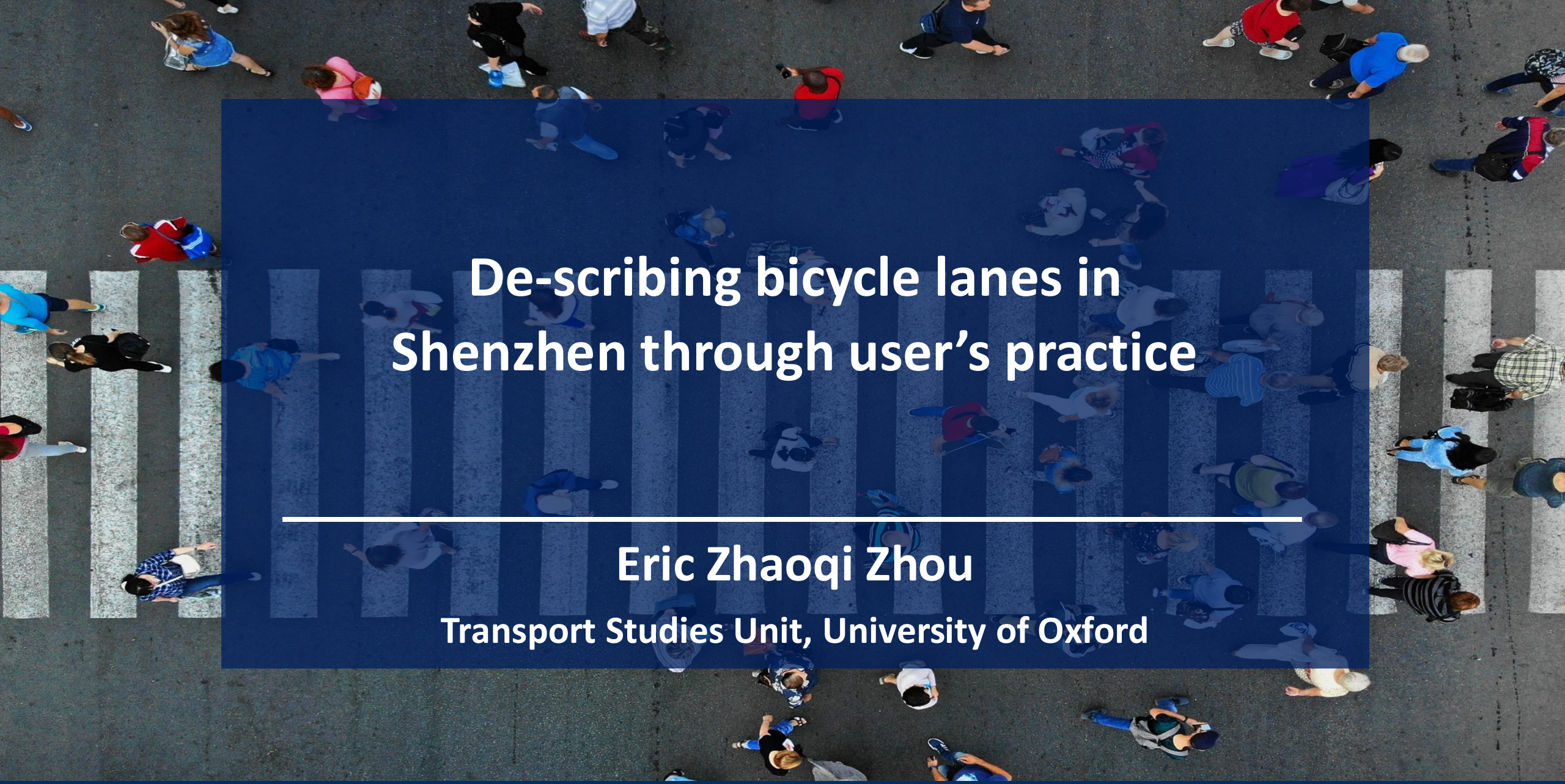

De-scribing bicycle lanes in Shenzhen through user's practice

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The context

- Third largest city in China
- A bicycle-unfriendly city
- Recent resurgence of cycling
- Large investment in bicycle lanes starting from 2010



History of bicycle lanes in Shenzhen







1990s
Dismantling of bicycle lanes to make space for cars

2008-2011
Construction of greenways as city image promotion for the Universiade

2015
Emergence of dockless bicycle sharing;
Construction of commuting bicycle lanes

2022-
Ban on e-mopeds lifted;
Conflict on sidewalk intensified

Problems that inspired this study

- Shenzhen invested heavily in bicycle lanes in the recent decade
- But situation on the sidewalk is not getting any better, but getting worse
- Many new bicycle lanes are not being used by cyclists
- Waste of resources, and waste of opportunity for transitioning to more sustainable urban transport!

Theoretical framework

Script analysis (Akrich, 1992; Akrich and Latuor, 1992)

- Designers inscribe scripts into technical objects, defining a framework of assumptions on how users are supposed to interact with these artefacts.
- Users might engage in “de-inscription” as they reject the script, or even “re-inscription” as they complicate the script and contribute to its changes
- Limitations in application: homogenise of scripts, “flat ontology” neglecting power relations

Infrastructure as relational (Star and Ruhleder, 1996; Star, 2002)

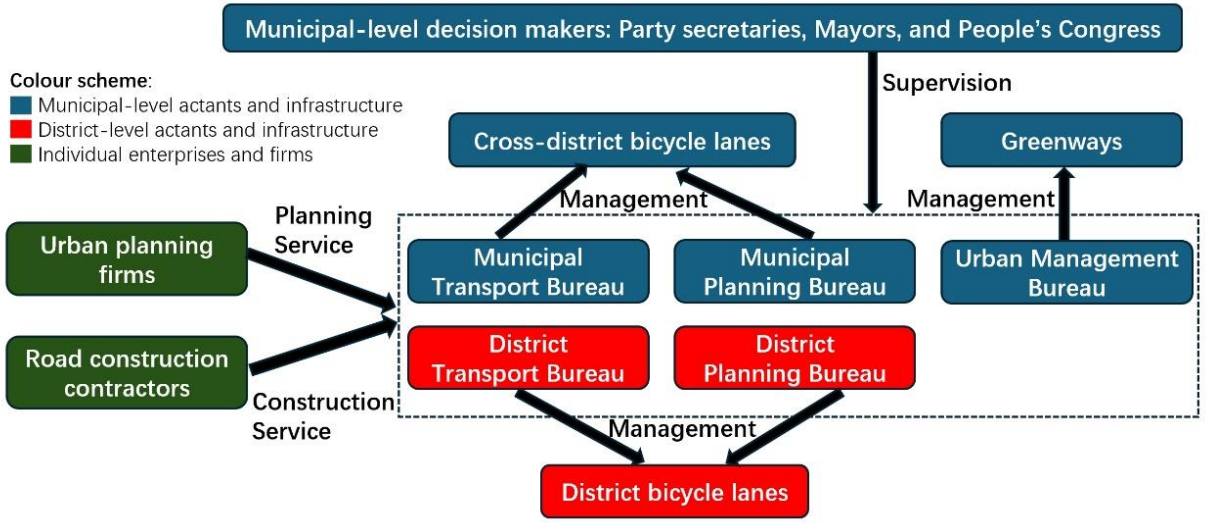
- Infrastructure is constantly being used and can only be understood in relation to organised practices

Strategies and tactics (de Certeau, 1984)

- Modernistic urban planners adopt a gaze from above and use strategies to control and manage flows
- Urban dwellers adopt tactics to take advantage of opportunities and produce urban space through everyday practices.

Methods

- Expert interviews
  - In-depth (~2 hours) interviews with five key urban planners, transport governors and other decision-makers
  - Covering all levels (district, municipal) and roles (planning, management, governance)
- Cyclist interviews and ride-alongs
  - 33 cyclists, 99 research sessions
  - Interview -> Ride-along -> Debriefing



The ride-along

- Travelling with participants on their familiar route
- Action camera attached to head to record the participant
- Video footages + Field notes + Debriefing interviews
- Understanding how and why cyclists are using, repurposing, or not using bicycle lanes.



Planning as a fix to maintain the status quo

"Transport planning is like controlling floods. Water has its own characteristics: it flows to low places. The characteristics of human beings can be summarised with five words: lazy, stupid, greedy, hurried, and private. People are lazy, so they will naturally prefer cars and electric mopeds to traditional bikes; they are also stupid and greedy, so you must focus on road safety to make sure they don't mess around. They are always in a hurry, so we need to prioritise efficiency. People prefer private space to public space, so there will always be demands for automobiles. We need to strike a balance and not impact automobile transport too much."

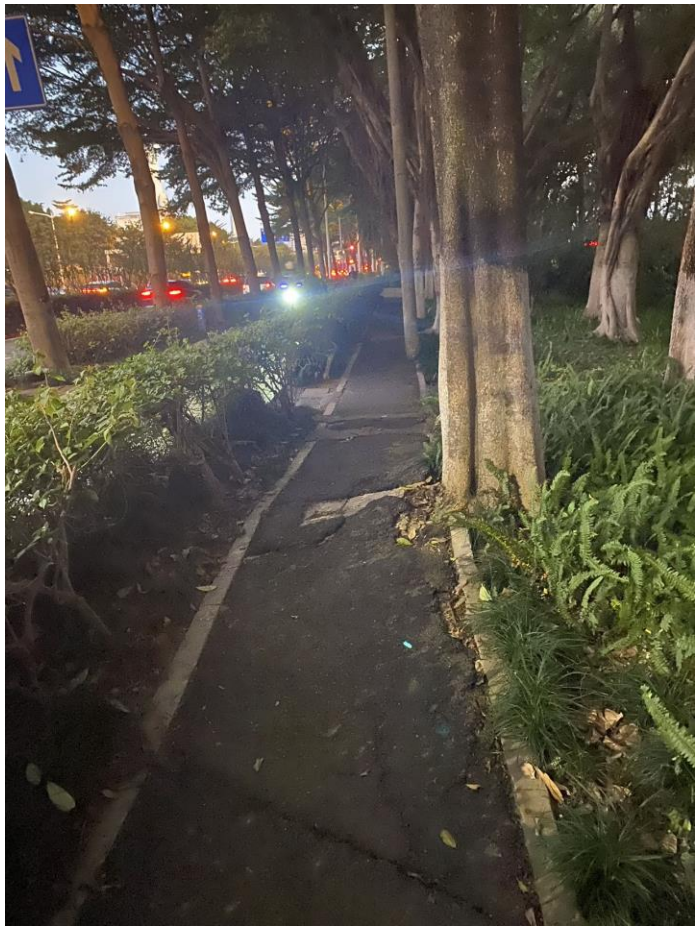
--- E3 (district-level transport planner)

Planning for a homogenised user

"The western way wants to let everyone participate, which is of course not a bad thing. But we don't have that time. I think planning for bicycle transport is a technical problem, not a social problem. Many things in transport behaviour can be internalized. You make a right turn here, I make a right turn here, everyone's right turns can be regarded as the same."

--- E2 (municipal-level urban planner and decision maker)

When should the bicycle lanes be used?

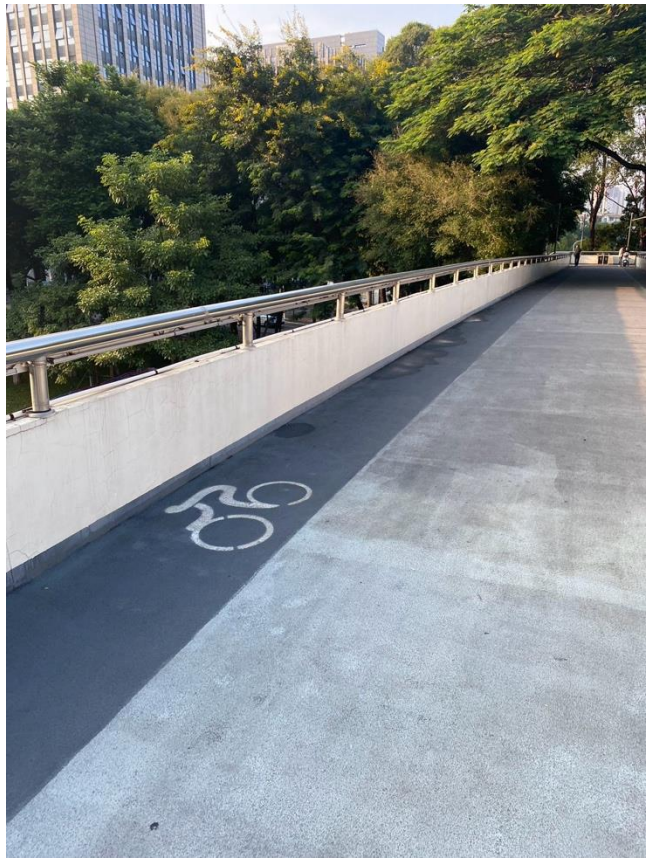




"It is a shame that we are no longer allowed in Shenzhen Bay (greenway). They spent so much money to build a beautiful and popular cycle way, but now they tell me that I can only cycle there before 9 am and after 18:30 pm in the weekend? What a joke."
---C14, Male, 50s

Where should the bicycle lanes be located?



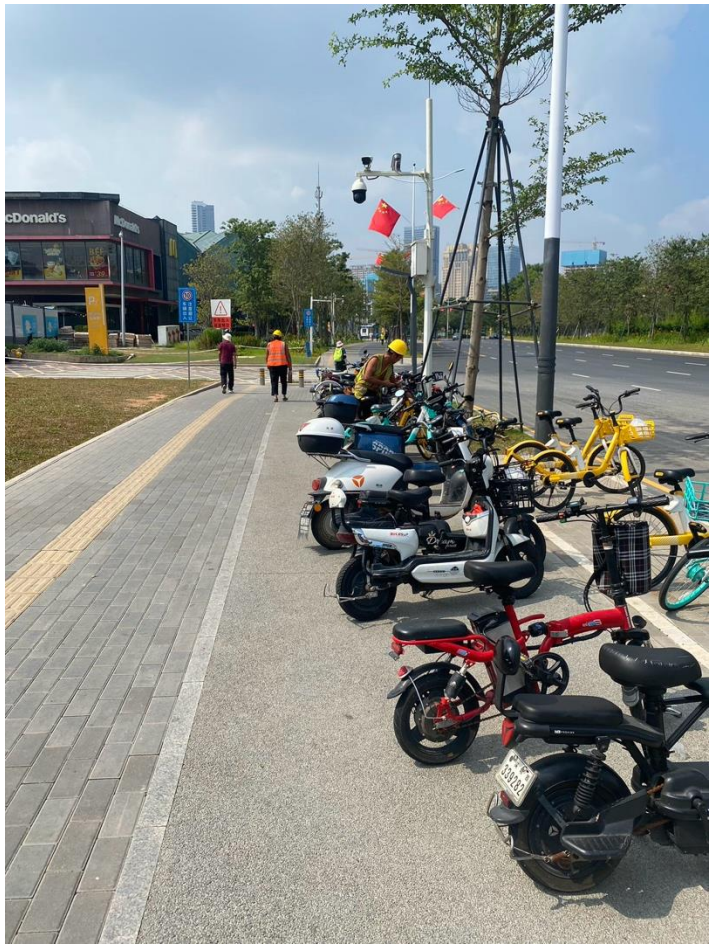


"Usually, there are many pedestrians on the bike lane and sidewalk in the evening, because there are many food stalls there. Even though I want to obey the rules and use the sidewalk, it is all blocked, and I find it hard and stressful to squeeze across the crowd. Cycling on car road is actually safer for me." ---C6, Female, 30s

For whom are the bicycle lanes built?



“I don’t cycle much nowadays, because there are just too many electric mopeds on the bicycle lanes. They are bigger, faster, and mightier, and I always feel nervous when mixed with them. I can’t control my bike very well, and my legs tremble when they beep loudly behind me.” ---C5, Female, 20s



Findings

- There are significant discrepancies between planners' and cyclists' understandings of bicycle lanes in three interrelated aspects: ***when*** they should be used, ***where*** they should be located, and ***for whom*** they are built.
- Planners have deliberately worked with weak scripts of bicycle lanes to maintain flexibility for a rapidly changing socio-technical landscape and avoid challenging automobile dominance
- Cyclists have engaged in tactics of "**de-inscribing**" and "**re-inscribing**" bicycle lanes, challenging designs that do not work for them and reconfiguring the infrastructure.

Planning implications

- **Strength of scripts matters**: a weak and ambiguous script can flexibly accommodate rapidly changing environments, but might also cause confusion and intensify conflicts
- **Users are not abstract and identical**: focusing on cyclists' different practices can potentially help planners design inscriptions that fit more closely to actual user demands.
- **De-inscriptions reflect problems but also create opportunities**: planners can adjust designs in an iterative cycle by collecting evidence from cyclists' de-inscription practices

Thank you for your time!

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