

THEORISING CYCLING

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To talk about theory in relation to an activity that appears to be simple, straightforward and self-evident might, at first, seem an odd choice. Surely, cycling simply requires a cycle, someone to ride it, and a space in which the riding can take place? However, when this simple equation is unpacked, it rapidly becomes obvious that this single description covers a multitude of activities. Cycling has a global history. It involves, as this volume demonstrates, a huge variety of stories, perspectives, participants and meanings. A lifetime could be spent in recording the multiple stories and events involved. The emergence of cycling studies as a distinct area of academic and popular research has shown that it also involves different ways of looking at the phenomenon and some radically contradictory ways of thinking about its current significance, its future, and even its past. Acts of interpretation inevitably and ineluctably engage us in the process of theorising, of creating ways of knowing the events and processes under scrutiny.

Much of the rise in cycling studies in the last two decades has been coupled with a simultaneous interest in theory in order to understand better why cycling phenomenon occur. Theories of change, for example, cast light on why certain societies' attitudes toward cycling have developed differently. Explanatory accounts differ, drawing on a range of disciplines and analytical frameworks. Apparently contradictory at a surface level, multiple explanations develop multi-layered explanations to overcome simple linear narratives struggling with complex realities. Further, they allow us to compare the relative importance of given factors in particular locations. Transport studies and cycle historians have naturally paid attention to

these questions: the focus here is on the emergence of studies on, and theorisation of, cycling in the social sciences.

Why theorise?

The point of social theory is to go beyond immediate observation and to make sense of the observable. Social theories provide means of interpretation to answer the “so what” dimension that arises whenever we are confronted by information. They go beyond data collection and ask, “why is this so?”, “what is significant about it being so?”, allowing social scientists to explore not only the presence of different variables, but also to assess their relative significance in relation to other processes. Theoretical models reveal underlying processes. They allow us to move beyond the particulars of the immediate to show how a given example might be generalised.

Beyond this function, at a more abstract level, social theory can have a more philosophical role to play. It can be used in speculative mode to suggest (or posit) a novel way of looking at phenomena. This may include underlying processes not obvious from data alone, for example, contrasting monetarist and Marxist interpretations of bike sharing. Theory allows the building of hypotheses that can be tested to determine whether models proposed have validity, and if so, what the reach of that validity is, even though the subject matter might be entirely abstract. Speculative thought provides further insights to show other ways of seeing events; explanations that can cast light on other allied but not similar phenomena. Social scientists of all persuasions can bring pre-existing ways of theorising sociality, social relations and social phenomena to bear upon cycling. The relation between cycling and social theory has been a fruitful one.

This chapter explores some of the ways in which theorising cycling has developed and examines some of the key ideas. It also shows some of the functions that they have had in

cycling studies, and how abstract conceptualisations may serve practical purposes. Links between theory, research, and policy are not direct. Testing theory and exploring ideas requires research and cycling studies have been notable in utilising novel methods including, for example, digital methods to explore experiences and perceptions (see, for example Brown and Spinney 2010, Spinney 2011)

Studies of cycling and society reflect the divergent trends in social science research. On the one hand, studies record (apparently) straightforward empirical measurement, telling us who does (or did) what, and where. Measurements of the identities of cyclists (according to factors such as gender, age, ethnicity or other social variables), of ride or trip lengths and purpose, of frequency, or of modal shift, all serve to enable basic understanding of what is going on. The “why?” needed to explain distributions requires different forms of analysis. Data collection and collation, recording, chronicling, and statistical analysis preserve information on what happens, and what relation it bears to other data. In transport studies, we might, for example explore user information to determine modal shift or rises and declines in journey frequency or length, or even journey purposes. We can measure who rides, activity distribution and how it relates to social inclusion or exclusion, to the maintenance and reinforcement of social privilege, or to its challenge in pursuit of more just and sustainable societies. Studying cycle sport we might explore participation rates, distributions by gender and the interaction between amateur sports organisations, participation and physical and mental health. As we see in other chapters in the volume, these correlations are vital dimensions of the bigger pictures of cycling studies. However, to go beyond the measurement inevitably engages us with social theory.

Data collection and empirical work is most obviously valued in the application of research to public policy and has led to a rapidly growing body of literature (Pucher and Buehler 2017) as this volume shows. The form, mode and techniques of analysis to interpret

data, depend on underpinning theories of how the world is and how it works. Even before the analysis, the very things researched and the questions that seek to be answered depend on underlying presuppositions not only about how things are, but also often on desires and expectations of how things could be, or how things ought to be. These normative questions are, as Oosterhuis (2014, 2016) has observed, very visible in cycling studies as they have emerged over the past twenty years. Persons electing to study cycling through an academic lens frequently reflect prior interests in cycling promotion outside academia.

Whether related to sport, transport, leisure or health, data on cycling and its comparison with other data sets allow deeper investigation into the nature of these relationships. Statistical analysis allows us insight into the relative significance of data correlations and to propose which relations might be causal, and what further research agendas are required to allow us to demonstrate the direction of effect between two (or more) variables. These ways of thinking about researching cycling are the keystones of research design and shape cycling studies.

However, there is a second dimension of social science research that on immediate inspection might appear a little more esoteric. It might even be assumed to be less valuable in terms of its impact on policy and practice. As we shall see, this assessment is not entirely accurate. It addresses the logical consequence of data analysis by focusing on the ‘so what’ factor. It asks why something matters (or not), why should it be of concern or worth further reflection? What might information be useful for?

Knowledge and theory

While investigations of cycling may appear to be self-evident explorations of fact, meanings and interpretations are subject to analysis and construction. As shown by recent work on knowledge production in other areas of social theory, knowledge is never neutral.

“Who produces knowledge, what is produced and what is “left out” are central questions of enquiry within the politics of knowledge” (Jansen 2019: 2). Consequently, cycling research, generating knowledge about cycling, has its own politics, especially in relation to what is, and what is not, researched. Different theoretical perspectives shape the form and direction of research. Distinct positions require and pose different sorts of research questions. In cycling studies, as Johnson and Bonham (2012) succinctly point out, a primary divide has emerged between realist and non-realist perspectives, reflecting different basic starting points in general philosophy. Non-realist analyses can be further divided between constructivist and social constructionist approaches. This is necessarily a simplification of a complex set of arguments and the categories are far from impermeable, but as a way of understanding the different directions and research questions taken in cycling studies, it is a useful guide.

Realist approaches, more properly, realist ontologies, view reality as existing independent of the individual. Objective knowledge of that reality is possible. This positive knowledge can then be used to inform decision making, either by individuals or in policy. These positions provide the majority of cycling studies, especially as related to health and to most policy analysis. Focusing on measurable problems and factors, a broad range of tools for research, data gathering, and analysis can be brought to bear from the conventions of existing and familiar social science practice. Critical realist approaches (typified by Melia 2016, 2020) present a valuable departure from straightforward realism, rejecting the positivism sometimes associated with realist ontologies. Applied as a way of understanding policy, particularly cycling policies, they show how deep and often hidden structures affect decision making in ways not easily accounted for in straightforward measurement.

Constructivist positions, by contrast, suggest that people are “born into an already interpreted world, they and their interpretations of the world are necessarily shaped by socially available understandings” (Bonham and Johnson 2012: 2). Such positions push

towards explorations of how people make sense of the world, how is meaning constructed and how are events interpreted. For cycling research, constructivist approaches allow us to interrogate how certain images and ideas around cycling emerge (Aldred 2010). Exploring worlds of mutable meanings does not preclude policy engagement. Instead, it can open up new ways of thinking about cycling policy, not as an arena of pre-determined optimal solutions but of conflict. Rather than searching for best practice solutions, questions posed from this perspective recognise and consider how different solutions might address different ways of understanding what cycling is for and for whom (Hoffman and Lugo 2014, Pugh 2019). Again, constructivist analysis has a broad base and legitimacy in current social science, although its precepts are perhaps less self-evident than realist ontologies.

A second line of non-realist approach is in social constructionism, which foregrounds concern with cyclists and cycling as products of different sets of relations. In other words, a cyclist may be literally described as a person on a bicycle, (physical reality is not being denied) but what that label 'cyclist' means for the person cycling and for any number of different onlookers, may be very different and mutable things, often contradictory, changing over time, and contested. From a constructionist perspective it is also legitimate to ask 'when is a cycle a cycle?'; in other words, to deconstruct the very category (Cox and Van de Walle 2007). How many wheels? How is it propelled? Is an e-bike still a bike? At what level of power augmentation can it still be considered as such (conceptually rather than legally)? Constructionist approaches require unpacking the categories of objects and activities under examination, not assuming that there are pre-existent, uncontested shared understandings of cycling practices and persons (Cox 2019).

A notable example of this approach in practice is Horton's (2007) paper on the social construction of fear. Without denying people's very real fears about cycling, he demonstrated how safety campaigns and regulations, ostensibly intended to allay fears, serve instead to

create a field of images, narratives and conversations (that is, a discourse), in which cycling is depicted as an intrinsically unsafe activity. Through this discourse, the language of unsafety becomes embedded (inherent) in the public image of cycling. Thus, individual apprehension is disconnected from risk and fed by the discourse. Rational analysis of fear as a response to risk becomes impossible in such circumstances.

Constructionist and constructivist approaches to thinking about cycling have led to greater dialogue with other areas of contemporary social theory. There are geographical variations in the prominence with which these positions appear in cycling studies, reflecting localised traditions in wider social science research, and marking different academic disciplinary sympathies or hostilities. While the debates over fundamental positions and theories of knowledge may seem obscure and arcane, even irrelevant, by entering these debates in wider social science research and thought, new directions in cycling studies have emerged.

Varieties of thinking and theorising

Directions in which cycling can be theorised fall into a number of interrelated but distinct streams. Different disciplines, as this volume illustrates, bring different concerns and methodological norms with implicit theoretical presumptions. That is, different ways of looking are rooted in different explanatory models. Historical accounts might seek explanation for the changing fortunes of cycling in business organisation and manufacturing histories (Epperson 2000), in the legal regulation of cycling (Longhurst, 2015), or the agency of cyclists themselves (Reid 2017). Each is enriched by theoretical explanations grounded in disciplinary sensitivities. For example, examining the destructive impact of colonialism, Boal (2001) also noted the relationship between crop failures caused by volcanic eruption and Karl von Drais' construction of his laufsmachine. While controversial, his analysis provides a

different way of thinking through events. Similarly, Kat Jungnickel's (2014) use of feminist theory to re-examine the use of patent innovations among Victorian cyclists allows us not just to record and reflect on their actions but also to rethink the agency of early women cyclists and what this has to contribute to wider narratives of gender and social roles.

Social theorising on cycling loosely divides between approaches concerned with the social construction of technology and those that place cycles and cycling within broader social analysis. Theories of technology deal with the machinery and mechanics of bicycles and tricycles and expand this to include users and geographies (Norcliffe 2009). Cycles have to be ridden and so further questions need to be asked in relations to who rides and why? What factors and processes ensure the distributions of technologies, their acceptability (or not) to different groups of users. Explanations are sought for the different distributions of cycling across geographical territories and between social groups divided by gender, class, race and other markers of distinction within the same location.

Cycling as a sociotechnology

In their ground-breaking work on the social construction of technological systems [SCOT] (1987), Bijker, Hughes and Pinch demonstrated that technologies do not develop or progress purely in response to technical imperatives, nor necessarily in a rational manner or direction. Rather, by considering the relationships between technologies and society, they showed how technological development is the outcome of a complex interaction of forces, often unexpected and rarely rational. Technological artefacts – sociotechnologies – are not comprehensible without consideration of their social origins. This means that sociotechnologies not only reflect but embody and, at least in part, reproduce the divisions, stratifications, and exclusions of the societies in which they are formed (Leonard 2003,

Norcliffe 2009). Bijker (1995) examined the transition from high bicycle to safety bicycle as one of three case studies to show how this works. While his depiction of the details of historical events was sharply criticised by specialist cycle historians, the basic argument remained sound (Shrivastava 2005).

SCOT analyses show the role of the social in technological development. Initially, technologies can be understood in many ways. Through familiarity and common practice in the actions of users, flexibility of interpretation gives way to obduracy: further innovation and redefinition become difficult. Examining changing patterns in the twentieth century cycle industry, especially the flurry of innovation and change occurring from the 1970s with the development of BMX and Mountain Biking, Rosen (1993, 2002) investigated how previously obdurate conditions may once again become fluid through the impact of broader social changes.

Oudshorn and Pinch (2003) further argued that technologies are effectively co-constructed by their users. In use, artefacts become repurposed in often unexpected ways. This renewed emphasis on users also helps highlight how innovation in cycling since the 1960s has largely come from outside the cycle industry. Where users pioneer new ideas and new uses, industry follows, not always successfully (Stoffers 2016). Significant developments in cycle technologies of sustainable transport, for new uses and new users, are actually produced as users become manufacturers (Cox and Rzewnicki, 2015 see also chapter 9).

Seeing cycles as technological artefacts inseparable from the societies in which they are used and developed, situates cycle use and users within broader social contexts. For example, gendered conventional bicycle designs embody particular expectations of gendered social roles and behaviours. Beyond cycle technology we need also to examine use and users, ways in which cycling behaviours and practices are mixed up with other concerns about

social equity and inequality. This requires engagement with other dimensions of social analysis.

Cycling as a cyborg activity

Haraway's influential 1985 essay *A cyborg manifesto: science, technology, and socialist-feminism* made a constructionist approach to feminist thought widespread. Lupton (1999) applied her image of the cyborg to illuminate the transformations of vehicular road users. Even without engaging Haraway's wider philosophico-political project of boundary dissolution, Butryn and Masucci (2003) used the cyborg to explore how cyclists emerge as an interplay of human body and technology. The basic imagery is not new, as Brogan (2016) points out, but the cyborg imagery and its constructionist basis provided a means by which to develop further thought on the ways in which the persons, technologies and spaces are connected in the act of cycling.

Still thinking about the interactions of humans and machines, Akrich and Latour (1992) and Latour (2005) explored the ways in which technologies (such as cycles) are bound up in networks of action (hence Actor-Network Theory or ANT). Technologies are not inert objects within these networks: differences in technology afford (and, conversely, constrain) different possibilities of action for different users. While not having wilful agency in the same way as human participants, technologies are 'actants' not neutral objects. Applied to cycling, this opens up new ways of thinking, for example, about how cycle use can shape cities and social relations of spaces within them; or the historic effects of cycle mobility to open opportunities for autonomous travel in sections of the community previously denied through class, gender or race. Cycling is also almost always a public act, so how these actions

are performed also matters. Without theory, we may observe patterns of change but be unable to use those observations.

Deleuze and Guattari's (1988) concept of an assemblage allows further progression.. Machines and humans are intertwined, but these relations take place in a broader network of connections that give meaning to the technologies and their usage. Cycles (when used in mobility and not just as items of display) are meaningless without the spaces in which they are used. Just as different cycle designs provide different opportunities of action (to different users), different spaces of use afford different possibilities to various combinations of user/machine (Norcliffe 2009). Cycling is thus a hybrid assemblage of cycle, user and space, and complex interactions between these (Cox 2019). One obvious implication of this is that policy needs to take account of the multiple 'cyclings' that emerge from different combinations of elements.

Cycling as a social practice

Social practice theory (Shove, Pantzar and Watson 2012, Watson 2012), uses cycling as an illustrative example. Social practices are those actions in society undertaken by many people, often on a mundane basis (cycling, doing the laundry, brushing one's teeth, recycling). However, rather than thinking about social practices as the sum of individual actions, Shove and her colleagues have examined how they can be depicted as the conjunctions of materials (physical things involved), competencies (skills and knowledge of participants) and meanings (values and discourses attached to the action). Social practices therefore take on an existence beyond the participation of individuals: the relationship between action and practice is inverted. Social practices can be said to recruit people, to offer potential participants rewards (real and /or symbolic) or, conversely to dissuade participation by constructing barriers, depending on the arrangements of the elements. Further, social

practices do not exist in isolation, they are interlinked with one another. Thinking through cycling in this way exposes cycling practices as more than the sum of individual behavioural choices (Spotswood 2016). Infrastructures and machines, the skills and knowledge required to use them, and the acquisitions processes, social reputation, all interact to shape cycling practices. This has clear implications for policy thinking (Shove 2011, 2015) especially considering changes required for greater sustainability: a situation in which cycling has much to offer (Parkin 2012).

Automobility and Vélomobility

Perhaps the most important contribution to theorising cycling and society (from the perspective of this writer's particular concern with cycling and sustainability), are those ways of thinking prompted by Urry's work on *mobilities*, specifically his analysis of *automobility*. (Urry 2005). His innovation was to move from examining the car either as an object or through its use, and to adopt a systems analysis of the sets of social, economic and political relations that are bound up with car use. As Cass and Manderscheid (2019) summarise, beyond the car lies a tangle of relations comprising "its production, fuel and infrastructure industries, the policies that create automobile landscapes that separate work, residence and other activities in space, as well as the discursive and cultural association of cars with freedom and autonomy. Modern lifestyles that archetypally centre on one-family-houses in suburbia, shopping centres and leisure facilities on the edge of cities represent the ideal of the 'good life' under automobility". Urry also notes the way this system also serves as the twentieth century's archetype of a growth-oriented carbon economy, in what he later called, carbon capitalism (Urry 2011).

Although not directly concerned with cycling, the system of automobility Urry describes has nevertheless provided the context for most of cycling's history. Even when

cycling was numerically greater, political decision-making and planning was designed to favour the car, and popular discourse held motoring as the most desirable form of personal mobility (Carter 2021). In the light of dramatic changes in carbon emissions required to address the climate crisis (WMO 2020) especially in the transport sector, cycling for transport has the potential to make significant contributions to future low-carbon transport scenarios. As the systemic analysis shows, however, the problem of automobility is not just an issue of the internal combustion engine. Electrification of the auto fleet will not address the energy-intensive requirements of the system. Consequently, authors such as Koglin (2013) have adopted vélomobility as a term to explore the parameters and possibilities of a system of mobility predicated not on private motoring but on human scaled mobilities based on active travel forms.

Conclusions

This is far from a comprehensive analysis of theoretical perspectives on cycling. Instead, it suggests social theory as necessary to comprehend cycling and society. Cycling activities are not separated from the rest of the social world. As we address the interaction of cycling with issues of work, of gender relations and roles, inequalities of class and race or of the social exclusion of people with impairments (and the ways in which these may be alleviated or exacerbated by the ways in which we think about and act on cycling), we are encountering issues of knowledge. Here we come back to the quotation from Jansen: that knowledge is always political – whose knowledge counts, and who is and is not included as having valid knowledge, is a political decision. Theorising cycling, the choice of ontological positions made in designing research and writing about cycling matters. There is always a temptation in social science research to identify problems and immediately focus on ways of solving them. Cycling researchers are not immune from this. However, by reflecting on the

underlying bases of thinking and the ways in which these have the potential to define problems in particular ways, this chapter is an attempt to assist better research design.

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