



Trends in local newspaper reporting of London cyclist fatalities 1992–2012: the role of the media in shaping the systems dynamics of cycling



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ABSTRACT

Background: Successfully increasing cycling across a broad range of the population would confer important health benefits, but many potential cyclists are deterred by fears about traffic danger. Media coverage of road traffic crashes may reinforce this perception. As part of a wider effort to model the system dynamics of urban cycling, in this paper we examined how media coverage of cyclist fatalities in London changed across a period when the prevalence of cycling doubled. We compared this with changes in the coverage of motorcyclist fatalities as a control group.

Methods: Police records of traffic crashes (STATS19) were used to identify all cyclist and motorcyclist fatalities in London between 1992 and 2012. We searched electronic archives of London's largest local newspaper to identify relevant articles (January 1992–April 2014), and sought to identify which police-reported fatalities received any media coverage. We repeated this in three smaller English cities.

Results: Across the period when cycling trips doubled in London, the proportion of fatalities covered in the local media increased from 6% in 1992–1994 to 75% in 2010–2012. By contrast, the coverage of motorcyclist fatalities remained low (4% in 1992–1994 versus 5% in 2010–2012; $p = 0.007$ for interaction between mode and time period). Comparisons with other English cities suggested that the changes observed in London might not occur in smaller cities with lower absolute numbers of crashes, as in these settings fatalities are almost always covered regardless of mode share (79–100% coverage for both cyclist and motorcyclist fatalities).

Conclusion: In large cities, an increase in the popularity (and therefore 'newsworthiness') of cycling may increase the propensity of the media to cover cyclist fatalities. This has the potential to give the public the impression that cycling has become more dangerous, and thereby initiate a negative feedback loop that dampens down further increases in cycling. Understanding these complex roles of the media in shaping cycling trends may help identify effective policy levers to achieve sustained growth in cycling.

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1. Introduction

The health benefits of cycling are well established (Lindsay et al., 2011; Woodcock et al., 2013; Pucher et al., 2010), with the physical activity benefits substantially outweighing the injury and air

pollution risks in populations where a broad range of age groups cycle (Rojas-Rueda et al., 2011; de Hartog et al., 2010; Woodcock et al., 2014). Increasing levels of cycling can also confer additional benefits including reducing urban congestion (Cabinet Office, 2009) and greenhouse gas emissions (Maizlish et al., 2013). Over the past twenty years, these benefits have prompted countries and cities across the world to develop pro-cycling policies (Aldred, 2012; Pucher et al., 2011; Butcher, 2012). This includes the recent publication of an ambitious 'Mayor's Vision for Cycling' in London (Greater London Authority, 2013), a city that has already seen rises in cycling. Nevertheless, cycling levels in London and other parts

Abbreviation: CI, confidence interval.

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of the UK remain lower than those in many European countries (Gatrell, 2011). Transport for London estimates that 23% of journeys could realistically be cycled in the capital, ten times higher than at present (Transport for London, 2010). Studies examining barriers to cycling have identified multiple factors that may contribute to lack of uptake (Pooley, 2011; Steinbach et al., 2011; Gatersleben and Haddad, 2010), but one of the most common reasons people give for not cycling is perceived risk (Lawson et al., 2013; Horton, 2007; Thornton et al., 2010).

It is plausible that the media plays an important role in shaping these safety concerns (Horton, 2007). The effect of media reporting on public opinion and behaviour is widely appreciated (Kitzinger, 2007; Genovesi et al., 2010; McCombs, 2013) including evidence that media can affect road safety behaviours (Phillips et al., 2011). McCombs' (McCombs, 2013) agenda-setting theory describes the role of the media in establishing which issues are most prominent in the public agenda (e.g. the extent to which 'cycling' is a topic worthy of public attention). In addition, later research also suggests that second-level agenda-setting may be at work, in defining how these issues are conceived (e.g. whether cycling is considered 'dangerous' or 'trendy') (McCombs and Stroud, 2014). This opinion-forming role may be particularly important with respect to coverage of cycling fatalities and serious injuries, because such incidents occur comparatively rarely and so are not directly experienced by most people on a regular basis. For this reason, it has been argued that people's overall perception of road traffic risks typically draws on media reporting as well as their personal perceptions of risk in their everyday lives (Hojman et al., 2005). Moreover, if the media provides memorable coverage of these comparatively rare incidents then the public may overestimate the risk of such events, a phenomenon known to psychologists as the 'availability heuristic' (Tversky and Kahneman, 1973). This phenomenon has been demonstrated most clearly for public fear of crime (Lowry et al., 2003; Greer, 2009). Cyclist deaths and serious injuries share aspects of newsworthiness with crime: they are easy to write about with a simple storyline and convenient access to information; have human interest to ordinary people; and may include enthralling details of violence. In addition, in the context of low levels of cycling, the absolute number of cycling deaths and injuries is low enough to permit each incident to be reported individually. This is a feature shared with aeroplane crashes, another type of risk that is overestimated by the public due to preferential media coverage (Kahneman, 2011). In this light, it is noteworthy that a recent media analysis in Australia found that the most common type of cycling-related story involved cyclists being injured (13.2%), while the second most common involved cyclists being killed (10.7%) (Rissel et al., 2010). Similar findings have been reported in London, with cycling 'accidents and dangers' accounting for 27% of all issues mentioned in cycling-related newspaper articles, a much higher percentage than any other category (Penalosa, 2011).

Recently, the role of the media in shaping attitudes to cycling has attracted the attention of researchers using a 'systems dynamics' perspective to model the dynamic influences on cycling for transport in cities (Macmillan et al., 2014). System dynamics modelling can incorporate the complex interplay of individual, societal, environmental and policy factors shaping behaviour and synthesise these into a qualitative causal theory of positive and negative feedback loops. This dynamic causal loop diagram can then be used as the basis for quantitative simulations to inform policy (Richardson, 2011), and such approaches are increasingly applied across a range of disciplines related to safety and behaviour (Goh et al., 2014; Underwood and Waterson, 2014). In two previous pieces of research, qualitative system dynamics models exploring the determinants of trends in urban cycling have been developed through interviews and workshops with a broad range of

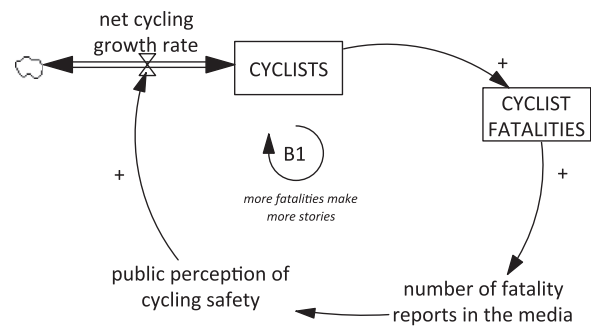


Fig. 1. Causal loop diagram linking levels of cycling in a population and media representations of cycling. Variables in boxes are those whose levels we are interested in following over time (stocks). Arrows with a positive sign (+) indicate that a change in the arrow-tail variable leads to a change in same direction in the arrow-head variable. Arrows with a negative sign (-) indicate that a change in the arrow-tail variable leads to an inverse (opposite direction) change in the arrow-head variable. Loops labelled 'B' are 'balancing loops', which have the effect of dampening the initial pattern of behaviour.

policy, community and academic stakeholders (Macmillan et al., 2014; Macmillan and Woodcock, 2013). During this development process, many of the relationships in these earlier models have been tested through data identification and simulation (Macmillan et al., 2014). These models propose that as cycling becomes more common in a population there is also likely to be an increase in the absolute number of cycling crashes (unless this is offset by an even faster decline in the risk per cycling trip) (Macmillan and Woodcock, 2013). If the number of crashes covered by the media increases in tandem, this is likely to decrease public perceptions of cycling safety. This is particularly the case if, as has been argued by elsewhere, public perceptions of road traffic risks are more sensitive to absolute numbers of events than to changes in the underlying statistical risks per unit of travel (Hojman et al., 2005). This could, in turn, introduce a negative feedback loop, dampening the total increase in cycling levels in a balancing loop (balancing loop 'B1' in Fig. 1). To our knowledge, however, there exists no empirical evidence concerning this particular part of the model, namely the relationship between changes in the prevalence of cycling and changes in media coverage of cycling road traffic crashes.

This paper therefore aimed to examine this relationship in London, a city in which cycling levels have almost doubled in the past 20 years (e.g. cycling represented 2.2% of commute trips in London in the 1991 census, 2.5% in 2001, and 4.3% in 2011 (Census, 2013); see also Fig. 2). Within the boundary of our model about urban cycling, our aim was to examine whether this change in the prevalence of cycling was associated with changes in the proportion of cyclist fatalities covered by London's largest local newspaper, and in the amount of coverage per fatality. In order to assess whether any observed changes might simply reflect wider trends in media coverage of road traffic crashes, rather than being specifically associated with increased cycling, we used the coverage of motorcyclist fatalities as a control. We used this as our control because (i) motorcycling is another a minority transport mode that carries a comparatively high risk of injuries, (ii) the prevalence of motorcycling in London remained relatively stable (1.2% commute modal share in 1991, 1.6% in 2001, 1.2% in 2011; see also Fig. 2), and (iii) pilot work indicated that motorcyclist fatalities resembled cyclist fatalities in being fairly readily identified in newspaper reports using keyword searches. We also sought to use a similar approach to compare London to three other English cities, with contrasting recent trajectories in cycling levels.

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