



(Im)mobility and Environment-Society Relations: Arguments for and against the Mobilisation of Environmental Sociology

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Relations: Arguments for and Against 3

the ‘Mobilisation’ of Environmental Sociology 4

Henrike Rau 5

Abstract Physical (im)mobility is central to many interactions between human society and the biophysical world. The chapter presents arguments for and against the ‘mobilisation’ of environmental sociology. Drawing on Urry’s (2000, 2007) ‘new mobilities paradigm’, it asks how such a ‘mobility turn’ might affect the conceptual and methodological focus of this sub-discipline, including its ability to challenge more conventional, anthropocentric approaches to sociological theory and research. It argues that a preoccupation with mobility, while beneficial in many ways, can eclipse more ‘static’ (or at any rate more ‘a-mobile’) influences on social life such as the continued impact of national political institutions on citizens’ social and physical (im)mobility and the regulation of social-environmental change. Environmental sociology, a field of inquiry committed to the systematic study of environment-society relations, seems ideally positioned to address some of these mobility issues, and in turn benefit from sociological approaches that take mobility seriously. 6-18

Keywords Mobility • Immobility • Inter- and transdisciplinarity • Mobility turn • Environmental sociology 19-20

Introduction 21

In recent years physical mobility has gained considerable prominence as a topic in social theory and research. This ‘mobility turn’ coincided with a heightened interest among many sociologists in the growing interconnectedness of the world brought about by technologies and the rapidly changing social, political and material conditions associated with globalisation. Although globalisation remains a contested 22-26

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27 concept that captures diverse trends, many commentators recognise the worldwide
 28 circulation of people, goods and information as one of its central characteristics.
 29 Some prominent sociologists have thus argued for a paradigm shift in the social
 30 sciences to advance the analysis of these global flows (Cresswell 2006; Urry 2007).
 31 They maintain that sociological inquiry in the twenty-first century can no longer
 32 remain pre-occupied with more static “units of analysis” such as societies and
 33 nation-states (Bauman 2000; Urry 2000, 2007). According to Cresswell and Uteng
 34 (2008: 1), “the understanding of ‘mobilities’ has offered a cohesive way of viewing
 35 the highly globalised/mobilised world we inhabit today.”

36 Recent efforts to bring about a ‘mobility turn’ in sociology (and cognate
 37 disciplines) have presented considerable challenges, which partly relate to
 38 the disciplinary division of labour in the social sciences. Traditionally, human
 39 spatial practices in general and physical mobility in particular have been considered
 40 the domain of geographers, town planners and engineers. Sociologists have hitherto
 41 paid little attention to the social and cultural causes and consequences of (increased)
 42 physical mobility and changes in mobility patterns, including daily commuting and
 43 car dependency (Rammler 1999; Rau 2009). While recent inter- and transdisciplinary
 44 studies have successfully attempted to address some of these gaps,¹ transport
 45 sociology remains a niche subject within sociology.

46 Physical (im)mobility is also central to many interactions between human
 47 society and the biophysical world. Environmental sociologists’ contributions to the
 48 globalisation debate have more or less explicitly focused on specific (im)mobilities,
 49 including the governance of global social and material flows and the emergence
 50 of global environmental movements (e.g., Macnaghten and Urry 1998; Spargaaren
 51 et al. 2006; Rootes 2007; Khoo and Rau forthcoming). Others have highlighted
 52 the environmental threats arising from late modern mobility practices and instances
 53 of ‘hypermobility’, most notably in the form of rapidly increasing greenhouse
 54 gas emissions from the transport sector (e.g., Brenck et al. 2007). For example,
 55 greenhouse gas emissions from the Irish transport sector increased by 160% between
 56 1990 and 2005, with transport being responsible for almost 20% of Ireland’s overall
 57 emissions (ICCC 2006).

58 This chapter presents arguments for and against the ‘mobilisation’ of environ-
 59 mental sociology. Drawing on Urry’s (2000, 2007) ‘new mobilities paradigm’,
 60 which gained considerable recognition among social scientists in the UK and Europe
 61 (but perhaps less so outside Europe), it asks how such a ‘mobility turn’ might affect
 62 the conceptual and methodological focus of this sub-discipline, including its ability
 63 to challenge more conventional, anthropocentric approaches to sociological theory
 64 and research. It argues that a preoccupation with mobility, while beneficial in
 65 many ways, can eclipse more ‘static’ (or at any rate more ‘a-mobile’) influences on
 66 social life such as the continued impact of national political institutions on citizens’

¹See, for example, *SceneSusTech*, a cross-national collaborative project on car transport systems and mobility patterns in European cities to explore scenarios for a sustainable society. Fieldwork for this project was carried out in the late 1990s and early 2000s in Dublin, Athens, Bologna and Helsinki (see Wickham 2006 for a more detailed description of the project).

social and physical (im)mobility and the regulation of social-environmental change. Environmental sociology, a discipline committed to the systematic study of environment-society relations, seems ideally positioned to address some of these mobility issues, and in turn benefit from sociological approaches that take mobility seriously.

Section 2 provides a brief overview of the recent ‘mobilisation of sociology’, focusing in particular on some of the contributions made by classical social thinkers like Simmel and their impact on Urry’s new mobilities paradigm. To demonstrate the potential benefits and drawbacks of a ‘mobilisation’ of environmental sociology, the chapter then critically examines three central claims associated with the new mobilities paradigm (and the ‘mobility turn’ more generally). First, the view is rehearsed that proposals to ‘mobilise’ social theory and research and develop a ‘sociology beyond societies’ challenge more traditional perspectives that place the nation-state at the centre of social inquiry. Given that many of today’s environmental problems and measures transgress the boundaries of nation-states, they should arguably be scrutinised through the lens of mobility rather than through more static tools for social research and analysis. This is not to imply, as some critics have claimed, that spatiality itself has been consistently neglected during the history of sociology. Secondly, the chapter critically assesses the notion of society as a system of mobile human and non-human actors, which is a cornerstone of Urry’s mobilities approach. Here, the inclusion of inanimate objects (e.g., ICTs, mobility devices) challenges more conventional sociological perspectives based on an anthropocentric perception of the relationship between people, technology and the environment. This view ties in with the critique of ‘human exemptionalism’ at the core of environmental sociology (Catton and Dunlap 1978; Williams 2007). Part five of this chapter engages with Urry’s controversial claim that the mobilities paradigm is post-disciplinary. What are the benefits and drawbacks of a post-disciplinary, eclectic paradigm that borrows from a range of different, perhaps even contradictory theoretical sources? Can this claim to post-disciplinarity be reconciled with recent calls for greater transdisciplinarity in other areas of environmental and sustainability research?

The concluding section of the chapter proposes to link the investigation of global (im)mobilities to questions of environmental (in)justice, thereby tapping into a well established field in environmental sociology and maximising the benefits of ‘mobilisation’. There is ample evidence to suggest that people without economic and political bargaining power have to shoulder a disproportionate amount of the social-environmental burden of mobility. Environmental risks such as those associated with car dependency often have a disproportionate effect on people who cannot afford to protect themselves against them. The routing of motorways and relief roads through areas inhabited by the less well off serves as a reminder that the distribution of mobility-related environmental risks is rarely “democratic” (Beck 1992) but reflects the hierarchy of social inequality. Similarly, adaptation strategies vary hugely depending on people’s economic and political status. Here, it is argued that well established concepts in environmental sociology such as environmental justice and ‘just sustainability’ (Agyeman et al. 2003) must be

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112 expanded to cover mobility-related tensions and imbalances. Introducing the
 113 concept of ‘just mobility’ into environmental sociological thinking might advance
 114 the analysis of pressing social and environmental problems, thereby strengthening
 115 the contribution of environmental sociology to current sustainability debates.

116 (Re)discovering spatiality in a globalised world: Steps towards the ‘mobilisation’ of
 117 sociology

[AU1]

118 Key sociological theories of globalisation consider the reorganisation of space (and
 119 time) to be central aspects of the ‘great transformation’ of human society in
 120 the twentieth and twenty-first century. Giddens (1990) links modernity to the
 121 development of transport and communication technologies that enable people to
 122 transcend existing temporal and spatial boundaries and maintain social relation-
 123 ships across ever-larger distances (*time-space-distantiation*). Harvey (1989) coined
 124 the term ‘time-space compression’ to describe people’s experiences of a shrinking
 125 world. Urry (2007) proposes to analyse the global reorganisation of time-space
 126 *through the lens of mobility*, thereby capturing the circulation and flows of people,
 127 goods and symbols and ideas across the globe (see also Hannam et al. 2006). His new
 128 mobilities paradigm promotes a post-disciplinary ‘sociology beyond societies’ which
 129 synthesises classical and contemporary work on a range of mobility-related themes,
 130 including migration, vagabondage and virtual travel.

131 The “mobilisation of the social world” and the “disembedding” of social life
 132 associated with modernisation and globalisation have evoked mixed reactions from
 133 sociologists and members of the public. While some commentators view increased
 134 mobility as a sign of progress, freedom and the success of the “project of modernity,”
 135 others criticise the involuntary nature of many instances of mobility that curtails
 136 people’s freedom to choose to be immobile (Benhabib and Resnik 2009). Yet others
 137 concentrate on immobility as a form of resistance to the social ills and environmen-
 138 tal destruction arising from ‘hypermobility’ (Adams 1999).

139 Urry’s mobilities paradigm captures this ambiguity. On the one hand, he associ-
 140 ates increased mobility with opportunities for intercultural exchange and the
 141 emergence of a global level of human agency. On the other hand, he highlights the
 142 unintended and chaotic aspects of (hyper)mobility, including the environmentally
 143 destructive and socially and politically disruptive dependency on fossil fuel for
 144 mobility. He argues that control over (certain aspects of) nature is central to most
 145 mobility efforts, which come to bear on social relations. Sociological analyses of
 146 the system of automobility illustrate how social relations are reflected in and
 147 shaped by the materialities of the biophysical world (e.g., fossil fuel, space, road
 148 infrastructure) as well as culture-specific ideas about the relationship between society
 149 and nature. Researching mobility-systems, therefore, offers ample opportunity to
 150 study environment-society relations and the ‘taming of nature’ and their increasing
 151 globalisation. According to Urry (2007: 13) “nature gets dramatically and system-
 152 atically ‘mobilized’” as part of the modernisation process.

153 Given the centrality of space in many of these contributions to the study of
 154 modernisation and globalisation, critics’ claims that sociology has largely ignored
 155 spatial phenomena, and continues to do so, seem rather spurious. In fact, the lasting
 156 influence of classical sociology on the study of space and mobility cannot be

underestimated, and often goes beyond the boundaries of the discipline. For example, 157
 an entire section of Urry's book *Mobilities* (Urry, 2007) is dedicated to Georg 158
 Simmel's mobility-centred work which 'provides the framework for this 159
 book by referring to most issues and topics to be examined' (p. 26). Simmel's 160
 essays *The Metropolis and Mental Life* (1997b [1903]) and *The Alpine Journey* 161
 (1997a [1895]), amongst others, serve as reminders of the importance of 162
 space-society relations in classical sociology. At the same time, they reveal the 163
 environmental consequences of modern socio-spatial practices such as leisure 164
 tourism and the commodification of the landscape, as is exemplified by Simmel's 165
 critique of "the wholesale opening-up [*of the Alps*] and enjoyment of nature" 166
 (1997a [1895]: 219) afforded by the construction of Swiss railway links. 167

Similarly, prominent instances of social anthropological community studies 168
 reveal an in-depth engagement with issues of space, place, identity and the envi- 169
 ronment (e.g., Arensberg and Kimball 2001 [1940], including the introduction 170
 to the third edition by A. Byrne, R. Edmondson and T. Varley). We also need to 171
 acknowledge the contributions made by human ecologists to the analysis of 172
 socio-spatial phenomena, which aimed to reveal the consequences of modernisation, 173
 urbanisation and migration for social relations and the organisation of space. Park's 174
 (1967 [1925]) essay *The Mind of the Hobo: Reflections upon the Relation between* 175
Mentality and Locomotion is indicative of the strong interest among human 176
 ecologists at the Chicago School of Sociology in the 1920s and 1930s in physical 177
 mobility and the study of rural and urban society-environment-interactions. 178

It is in locomotion, also, that the peculiar type of organization that we call 'social' develops. 179
 The characteristic of a social organism – if we may call it an organism – is the fact that it is 180
 made up of individuals capable of independent locomotion ... It is this fact of locomotion 181
 ... that defines the very nature of society. (Park 1967 [1925]: 157–159) 182

In the second half of the twentieth century, Sennet (1991 [1977]), Lefebvre (1991 183
 [1974]) and Castells (1996) all made substantive contributions to the sociology 184
 of space and mobility, albeit from very different theoretical and ideological 185
 standpoints. Their work covers, among many other things, mobility-related aspects 186
 of city life, including car ownership and use as well as the impact of transport 187
 infrastructure development on urban and social fabric. 188

Overall, there is ample evidence that the spatiality of human social behaviour, 189
 including the growing mobilisation of people, objects and ideas as part of the 190
 modernisation process, received considerable attention in classical sociology. 191
 Contemporary sociological studies of space and mobility continue to challenge 192
 more established sociological ways of thinking about 'the social' as detached 193
 from the physical environment by emphasising the inherent materiality of (im) 194
 mobilities. Recent proposals for a 'mobility turn' and a paradigmatic shift towards 195
 'a sociology beyond society' thus promise to advance a strand of research 196
 which has environment-society relations at its heart. This chapter will now focus 197
 on three key characteristics of Urry's new mobilities paradigm, namely its 198
 challenge to nation-state thinking, its conceptual integration of non-human actors 199
 and its post-disciplinary eclecticism, to further examine its potential use for 200
 environmental sociology. 201

202 **Porous Borders, Impregnable Boundaries: Mobility,**
 203 **Citizenship and the Nation-State**

204 The development of sociology in the nineteenth century coincided with the rise
 205 of the modern nation-state as key political and administrative unit in many parts
 206 of Europe. As a result, thinking about society in terms of national identity and
 207 territory has been a central element of the sociological project, at least until
 208 the second half of the twentieth century. However, increased labour mobility,
 209 forced and voluntary migration and global material flows (e.g., resources,
 210 hazardous waste and other environmental risks) have challenged these beliefs.
 211 The introduction of ‘globalisation’ as a major theoretical concept in sociology
 212 in the 1970s called into question conventional notions of ‘society’ as a spatially
 213 defined entity that provides its members with a sense of place and a set of
 214 identity-defining institutions. Similarly, the emergence of environmental soci-
 215 ology as a sub-discipline in the 1970s drew attention to the global nature of many
 216 ecological problems and the interconnectedness of environmental movements
 217 around the world.

218 New concepts of ‘society’ as culturally heterogeneous, mobile and cosmo-
 219 politan emerged in mainstream sociological thinking, which reflected the growing
 220 international interdependence brought about by technological innovation and
 221 related changes in temporal and spatial practices (Castells 1996; Beck and Sznaider
 222 2006; Urry 1999, 2007). The question whether and to what extent nation-states
 223 and governments could retain power in the face of this increasing global interde-
 224 pendence became the subject of intense debate among sociologists.² Urry (2007)
 225 argues that states are losing their ability to use legal frameworks and physical
 226 coercion to regulate the mobilities of their citizens. Instead, attempts by state
 227 actors to control global flows and cyberspace through the use of surveillance
 228 and anti-terrorism legislation have become more widespread. Intercepting and
 229 screening email and telephone conversations of (environmental) activists are
 230 part of the repertoire of measures used to control the mobility of citizens in a
 231 globalised world.

232 Some commentators have rejected claims by contemporary sociologists that
 233 classical sociology has been too pre-occupied with the nation-state and that the
 234 concepts, methodologies and terminology used by social thinkers such as Marx,
 235 Weber, Durkheim and Simmel are largely irrelevant in the context of current
 236 debates on globalisation and cosmopolitanism (Turner 2006). Instead, these authors
 237 argue that some of the ideas of the early sociologists could be re-visited while
 238 admitting that there may be limitations to the applicability of certain concepts outside
 239 the realm of the nation-state. As Turner (2006: 146) observes,

²The well-publicised globalisation debate at the London School of Economics and Political Science between Leslie Sklair and Anthony Giddens captures some of these issues (LSE 2001). Excerpts from the debate can be found at <http://www.fathom.com/course/10701014/index.html>.

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To employ the notion of citizenship outside the confines of the nation-state is to distort the meaning of the term, indeed to render it meaningless. [...] some terms are properly national and must remain so. There are limits to the idea of ‘sociology beyond societies’ because some concepts are inherently not mobile, but necessarily fixed and specific. It does not follow that they are useless; it merely signifies that some institutions cannot become global [...].

Proponents of this perspective maintain that national institutions and governments still have a substantial role to play and that nation-states continue to exert considerable power, in particular with regard to controlling the flows of people, goods and capital (Ray 2002; Turner 2007). They would argue that notions of ‘flexible citizenship’ (Ong 1999) or ‘global citizenship’ based on cosmopolitanism and lifestyle politics (Carter 2001) are misleading because citizenship tends to resist ‘mobilisation’.

However, this standpoint is challenged by the overwhelming amount of evidence that many of today’s social, economic and environmental problems simply cannot be solved at the national level. Nation-states are losing their autonomy in crucial areas such as banking and finance, market regulation, migration and environmental protection. While a shift in sovereignty from the national to the supranational may be deliberate, as in the case of EU membership, it can create new and unintended interdependencies both within and between individual states. More importantly, it is argued here that economic, political and socio-cultural changes of the kind witnessed during the onset of the global economic recession in 2008 produce *material outcomes* which remain poorly understood and which environmental sociologists need to focus on. Those who argue that the ‘era of the nation-state’ has been superseded by a new phase of ‘capitalism without boundaries and frontiers’ also remind us that this ‘footloose’ and disembodied global economic system remains highly carbon-dependent and wedded to the logic of industrialism and economic growth, thereby producing previously unknown global environmental threats (e.g., climate change). For example, Giddens (1990) observes that the (over) exploitation of natural resources constitutes a key driver behind the processes of modernisation. A ‘mobility turn’ in the social sciences would draw further attention to the crucial role of material flows in the emergence of global economic systems and their effects on society and the environment.

In summary, social scientists are increasingly calling for a re-conceptualisation of society as a network or system of mobilities, a trend which appears to be most pronounced in the English-speaking parts of Europe. John Urry’s new mobilities paradigm challenges conventional ideas of society as static and territorially bound. The ‘mobilisation’ of social analysis and research offers a promising new direction for the investigation of global social and ecological threats such as anthropogenic climate change because of its critical stance on the nation-state (and other static spatial entities such as the neighbourhood) as primary unit of analysis. The next section focuses on how the mobilities paradigm challenges anthropocentric views of social relations by focusing on non-human actors in various systems of mobilities, including resource and waste streams that shape environment-society relations globally.

285 **Actors, Actants and Hybrids: The Materiality**
 286 **of Environment-Society Relations**

287 As stated above, mobility-centred social research tends to emphasise the materiality
 288 of economic and socio-environmental relations, thereby critiquing post-modern
 289 globalisation theories that posit the dematerialisation of social life. For example, the
 290 consequences of human (auto)mobility for rural and urban social and physical
 291 environments dominate much social scientific work on transport patterns, modal
 292 choice and sustainability policies (e.g., Whitelegg 1997; Kaufmann 2000). According
 293 to Urry (2004: 26), the system of automobility constitutes ‘the single most important
 294 cause of environmental resource-use’. This emphasis on resource use and material
 295 flows, inanimate objects, technologies and waste products clearly challenges
 296 conventional approaches to social theory and research that see the study of material
 297 realities as beyond the remit of sociology. A focus on mobilities thus provides
 298 opportunities to (re)define environment-society relations and investigate their social
 299 and material outcomes in depth.

300 Many existing studies of ‘mobile’ social relations reveal the complex interplay
 301 between human actors, inanimate objects (e.g., cars, bicycles) and the wider physical
 302 environment; however, the nature of these relationships frequently remains under-
 303 theorised. Urry’s mobilities paradigm aims to address this gap by advancing the concept
 304 of *hybridisation*, that is, the notion of human agency as the product of interactions
 305 between people and objects. His catalogue of ‘new mobile rules for sociological
 306 method’ includes a commitment to treating ‘things as social facts’ and to ‘see agency as
 307 stemming from the mutual intersections of objects and peoples’ (2007: 9). The concept
 308 of the ‘car-driver’ expresses this complex, two-way relationship between people and
 309 their cars which defines automobility as a socio-spatial practice and which recognises
 310 that inanimate gadgets and technologies influence social practices and vice versa.

311 Theoretical proposals regarding the role of non-human actors in social relations,
 312 some of which actually ascribe agency to inanimate objects, have been subject to
 313 considerable debate in environmental sociology since the 1980s. Actor-network theory
 314 (ANT), an approach to network analysis developed by Bruno Latour and others, is
 315 perhaps one of the most prominent attempts to redefine environment-society relations
 316 (e.g., Law and Hassard 1999; Latour 2005). ANT draws on theoretical and empirical
 317 contributions from European and North American sciences and technology studies
 318 (STS) to make visible both the materiality and meanings of networks and their
 319 recreation or ‘performance’ through everyday practice. While its concept of agency as
 320 the product of associational links between human and non-human actors (also known
 321 as *actants*) remains controversial to date, ANT has been a major influence on European
 322 environmental sociology. Urry’s mobilities research draws on fundamental elements
 323 of ANT, notably the notion of actants, but shifts the focus on to mobilities that
 324 constitute and maintain these hybrid networks of people and technologies.

325 [...] technologies do not derive directly and uniquely from human intentions and actions.
 326 They are intricately interconnected with machines, texts, objects and other technologies
 327 (Michael 1996). [...] there are no purified *social* structures as such, only hybrids (Latour
 328 1993). (Urry 2000: 33, emphasis in original)

[AU2]
 [AU3]

The centrality of the concept of hybridity is arguably a key strength of the mobilities paradigm that makes it attractive to social scientists interested in environment-society relations. It is argued that the study of socio-technical networks (e.g., auto-mobility, public transport) and their environmental consequences could be advanced through more holistic, problem-focused and theoretically informed mobility research that moves beyond current concerns with the sustainability of particular transport options or technical solutions. The following section asks how arguments put forward by Urry and others that the social scientific investigation of diverse mobilities needs to move beyond disciplinary boundaries could be connected to recent calls by environmental sociologists and sustainability researchers for more transdisciplinary research.

Beyond Disciplinary Boundaries? Transdisciplinarity, Post-disciplinarity and the Use of “Mobile Methods”

Until recently the study of transport and mobility was considered the domain of engineers, town planners, geographers and economists, not sociologists. As a result, the consequences of increased mobility for society and the environment and the social implications of unequal access to mobility opportunities received little attention in transport research and policy. The development of a coherent sub-discipline that could synthesise and advance existing instances of ‘mobile’ social theory and research thus remained a distant goal for many decades. More recently, however, there has been a marked increase in interest in mobility as socio-spatial practice that significantly affects the transition to sustainability (Buhr et al. 1999; Kaufmann 2000; Schöller et al. 2007). This raises a number of interesting methodological questions regarding how to do social research on mobility issues and whether existing disciplinary boundaries help or hinder the process.

Calls for transdisciplinarity in environmental sociology and sustainability research are often met with considerable confusion regarding the scope and meanings of such an approach. According to Hadorn et al. (2008: 3), transdisciplinarity attempts to address the gap between ‘knowledge production in academia, and knowledge requests for solving societal problems.’ This definition hints at some core issues that are central to many debates on disciplinary divisions and the relationship between scientific expertise and practical know-how (cf. Fischer 2000). Firstly, it suggests that knowledge production in the academic realm needs to focus more on mitigating practical problems, such as poverty and environmental degradation. Is it possible to provide answers to today’s pressing social and ecological problems through research that connects theory and practice across different disciplines and fields? Secondly, it suggests the democratisation of scientific knowledge production to give greater prominence to local knowledge and lay expertise. But who decides what counts as useful knowledge or ‘expertise’? However, transdisciplinarity also involves many problems over and above the involvement of non-academic actors and problems in themselves. Commenting on calls by Gore or Tickell to new forms

370 of thinking in connection with the environment, Edmondson (2008) shows that
 371 'wise' forms of environmental debate involve blends of ethical, social, political and
 372 cognitive arguing which might conventionally be held to transgress the bounds of
 373 everyday academic disciplines. While a detailed discussion of these issues is
 374 beyond the scope of this chapter, a brief examination of recent instances of inter- and
 375 transdisciplinary mobilities research can add further nuance to the debate.

376 Researching the multi-faceted nature of physical mobility requires innovative
 377 theoretical and methodological frameworks that merge input from different disci-
 378 plines. Recent seminal publications in transport sociology and policy studies reveal
 379 the scope and breadth of existing empirical and conceptual work (Buhr et al. 1999;
 380 Vigar 2002; Schöller et al. 2007). While the practical nature and policy relevance
 381 of many mobility issues has clearly pushed the field towards more applied inter- and
 382 transdisciplinary transportation research, we can also identify a number of concep-
 383 tual issues which have received attention. For example, there is a growing body of
 384 social and political science research on access, mobility and social inclusion
 385 (e.g., Hine and Mitchell 2003; Kaufmann et al. 2004; Rau and Hennessy 2009) and
 386 the potential role of virtual mobility tools and options in addressing existing
 387 exclusionary patterns (e.g., Kenyon et al. 2003). This said, recent claims that social
 388 and political science research has entered an era of post-disciplinarity need to be
 389 treated with some scepticism given the persistence of (sub-)disciplinary divisions
 390 in mainstream transport and mobilities research.

391 Urry (2007) proposes a number of steps towards the 'mobilisation' of social
 392 theory and research. As regards the theoretical framework, his new mobilities
 393 paradigm draws on a range of different theoretical suppositions, including
 394 Simmel's essays on the metropolis, Bauman's work on state-society relations,
 395 Latour's Actor-Network Theory and aspects of Luhmann's systems theory.
 396 In fact, he describes his mobilities paradigm as 'post-disciplinary' and 'eclectic',
 397 which has attracted considerable criticism from some commentators. Nevertheless
 398 it can be argued that his commitment to a 'sociology beyond society' is clearly
 399 rooted in his long-standing conviction that one of sociology's main strength lies
 400 in its ability to be 'parasitic' and to scavenge from other, more reductionist disciplines
 401 (cf. Urry 1981).

402 Sociology seeks understanding of the nature of our social life, how social connections
 403 face-to-face and at a distance are contingently enabled and performed. And it does this
 404 through scavenging from insights and approaches thrown up/out elsewhere especially
 405 revealing the material worlds which social life both depends upon and iteratively
 406 reproduces. (Urry 2005: 1.9).

407 The resulting *assemblage* of different theoretical fragments and approaches
 408 vividly illustrates the interconnectedness of sociological thinking and its links with
 409 other disciplines; it also reflects Urry's critical stance on rigid (sub)disciplinary
 410 divisions.

411 [A]lthough I am a fan of inter- and trans-disciplinary studies, these must be based upon
 412 strong and coherent disciplines. There is nothing worse than a lowest common denominator
 413 interdisciplinarity. But there is also little worse than a discipline seeking to erect boundaries
 414 around something that cannot be bounded, trying to pull up the drawbridge when there is

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little ‘essence’ left within the castle. [...] sociology has prospered and grown especially 415
 through drawing upon and providing a space of contestation and debate between elements 416
 often extruded from other more reductionist disciplines [...*sociology is*] more a field or 417
 perhaps a network and less organised through hierarchy. (Urry 2005: 1.2–1.3) 418

On the other hand, Urry’s theoretical synthesis efforts produce considerable 419
 tensions and contradictions that cannot always be satisfactorily resolved and that 420
 occasionally appear to present a barrier to the integration of different strands of theory 421
 and meaningful empirical research. For example, we can detect strong leanings 422
 towards ‘systems-thinking’ in some of Urry’s publications on automobility, including 423
 references to Luhmann’s definition of autopoiesis and to path-dependency, coercion, 424
 non-linearity, complex systems change and tipping points. 425

Automobility can be conceptualized as a self-organizing, autopoietic, non-linear system 426
 that spreads world-wide. [...] Automobility is thus a system that *coerces* people into 427
 an intense *flexibility*. It forces people to juggle fragments of time so as to deal with the 428
 temporal and spatial constraints that it itself generates. [...] The car is the literal ‘iron cage’ 429
 of modernity, motorized, moving and domestic. (Urry 2004: 27, emphasis in original). 430

This coincides with the use of biological and organicist metaphors such as ‘viral 431
 spread’ and ‘contagion’ to describe the non-linear development of the car system 432
 in the nineteenth and twentieth century and its constraining effects on human 433
 mobility. This contrasts with other aspects of Urry’s mobility-related work where 434
 he focuses on the formation of networks and the fluidity of social relations vis-à-vis 435
 human-technology-hybrids, thereby emphasising the role of human agency in the 436
 creation of the ‘system of automobility’. Overall, Urry’s mobilities approach seems 437
 to oscillate between an emphasis on structures and systems and a strong focus on 438
 performativity, complexity and agency. No doubt this reflects the fact that human 439
 societies *are* composed in part of structures and systems but still allow some room 440
 for human agency, but the mobilities approach alone may not identify which is 441
 dominant, in what ways, in particular instances. Thus translating it into workable 442
 designs for empirical research may present challenges which call for further work. 443

In relation to research methodology and practice for the investigation of (im) 444
 mobilities, Urry proposes a number of ‘mobile methods’ that are ‘on the move’ and 445
 that address some of the weaknesses of more conventional forms of sociological 446
 inquiry and engagement, including their inability to deal with highly fluid, fleeting 447
 and dispersed socio-spatial phenomena and their lack of interest in material contexts 448
 of human behaviour (see also Büscher and Urry 2009). These new tools for social 449
 research include covert and overt observation of people’s movement, recordings of 450
 corporeal and virtual mobilities, mobile ethnography and participant observation 451
 (e.g., ‘walking with’ methodology) and the collection of time-space diaries. 452
 For example, the *Habitable Cars* project carried out by Laurier et al. (2008) 453
 deployed such a ‘mobile method’; their ‘driving with’ methodology involved video 454
 recordings of the inside of the car by participants and members of the research 455
 team. These recordings were then analysed to document the inhabitation of the car 456
 by family members and to capture people’s mobility behaviour. 457

In conclusion, the mobilities paradigm provides for a radical departure from more 458
 conventional approaches to sociological theory and research. This presents a number 459

460 of advantages, including greater flexibility and openness to social research ‘beyond
 461 disciplinary boundaries’. On the other hand, the adoption of a post-disciplinary,
 462 eclectic theoretical framework throws up new challenges and difficulties for
 463 problem-oriented transdisciplinary empirical research. For example, it may not
 464 always be easy to translate complex theoretical concepts, such as those presented by
 465 Urry (2007), into workable designs for empirical mobilities research. While the use
 466 of ‘mobile methods’ offers some new and innovative strategies for data collection and
 467 analysis, their deployment raises a number of methodological and epistemological
 468 issues. Is it possible to engage in post-disciplinary empirical research and, if so,
 469 what might such an approach look like? What unit of analysis is most appropriate
 470 for a particular type of mobilities research? Can the adoption of a critical realist
 471 stance help mitigate tensions between realist and constructivist perspectives? Are
 472 these different perspectives necessarily connected to specific approaches to data
 473 collection and analysis, such as positivist, interpretivist or multi-method designs?
 474 These and other questions have yet to be satisfactorily addressed before a post-
 475 disciplinary framework for ‘mobile’ social research can be advocated for adoption
 476 in environmental sociology and transdisciplinary sustainability research.

477 **(Im)mobilities, (In)equality and the Politics** 478 **of Sustainable Development**

479 In a globalised world characterised by hypermobility, complex economic, techno-
 480 logical and cultural interdependencies and widening gaps in wealth, social and
 481 physical mobility become closely intertwined. This concluding section of the chapter
 482 argues that mobility-focused social-environmental theory and research needs to
 483 capture and critically examine this relationship between (im)mobility and (in)
 484 equality and its environmental outcomes, much more so than is currently the case.
 485 It makes the case that the sociological study of global (im)mobilities and environ-
 486 mental (in)justice presents itself as a prime area in which the ‘mobilisation’ of
 487 environmental sociology could be advanced. Mobility opportunities need to be
 488 understood as an important resource whose distribution can act as a powerful
 489 catalyst for social-environmental change, for better or for worse. The question how
 490 to achieve a just and fair distribution of actual and potential socio-spatial mobility
 491 without risking environmental degradation needs to be central to a ‘mobilised’
 492 environmental sociology and sustainability research agenda.

493 Urry’s new mobilities paradigm aims to address the consequences of ‘[...] too
 494 little movement for some or too much for others or of the wrong sort or at the
 495 wrong time’ (Urry 2007: 6). He maintains that ‘analysing [...] mobilities involves
 496 examining many consequences for different people and places that can [*be*] said to
 497 be in the fast and slow lanes of social life. There is a proliferation of places,
 498 technologies and ‘gates’ that enhance the mobilities of some and reinforce the
 499 immobilities of others’ (2007: 11). Interactions between spatial mobility and social
 500 standing also produce complex socio-environmental outcomes, which may reduce

or exacerbate inequalities in society. For example, labour mobility, that is, people's ability to change location in search for employment, has become a key factor with regard to social mobility. At the same time, it has enormous consequences for the geographical distribution of people and resources, energy consumption, urbanisation rates and transport patterns, to name but a few. Similar observations can be made in relation to individualised (auto)mobility, car dependency and long-distance commuting.

The interrelationship between physical (im)mobility and social (dis)advantage is captured in Kaufmann et al.'s (2004) notion of 'motility', that is the capacity for socio-spatial mobility, which they consider as a form of capital. Urry (2007) draws on Kaufmann et al.'s work and deploys the Bourdieuan concepts of habitus and field to formulate his theory of network capital. He suggests that 'mobilities develop into a distinct field with characteristic struggles, tastes and habituses [...] which gives rise to an emergent form of capital, network capital, that is a prerequisite to living in the rich 'north' of contemporary capitalism' (2007: 196). Urry uses the terms 'kinetic elites' to describe privileged groups in society whose movement is largely unrestricted by economic and political conditions and whose member can avail of network capital. This contrasts with less powerful social groups whose ability to move is severely restricted and whose quality of life, health and economic security is reduced by the mobility options of others.

People's ability to move around is almost always subject to political intervention by the state and other interested parties, including corporations and employers, which may or may not have a common goal. For example, the incarceration of suspected and actual offenders illustrates the state's ability to immobilise its citizens. Similarly, the regulation of cross-border migration frequently reflects insurmountable tensions between the needs of the global economy for a mobile workforce and attempts by nation-states to retain power and monitor and control the movements of their citizens (Turner 2007). Growing numbers of environmental refugees who suffer displacement due to climate change and other ecological threats are likely to exacerbate these tensions.

On the other hand, states often encourage certain types of intra-national mobility, for example through the provision of transport infrastructure. The motorway as a symbol of political power, economic progress and freedom has been a central feature of modern nation-building. Similarly, the development of civil aviation after WWII was a major step towards the mobilisation of people and goods. More recently, supranational political entities have come to play an increasingly important role in regulating people's physical mobility, thereby influencing socio-economic opportunities and barriers. In a European context, the impact of the EU on labour and geographical mobility has been significant. In fact, freedom of movement between member-states has been one of the main goals of the European project since its inception, bringing with it the physical mobilisation of a large proportion of the European polity and the transformation of politics. This said, many mobility-related social and environmental issues remain subject to more conventional multi-level governance processes at local, national and supranational level.

546 Politics and technological innovation are key driving forces behind the
547 mobilisation of people, objects and ideas. Urry (2004: 33) recognises the politics
548 of automobility as a key factor pushing the current unsustainable car system
549 towards a tipping point. In his opinion, it takes a set of interdependent changes in
550 the political and social fabric of world society, occurring in a particular sequence,
551 to transform today's locked-in car system into a post-car system. But what changes
552 in environment-society relations might tip the system into a new path? According
553 to Urry (2004), a reduction in mankind's dependency on non-renewable resources
554 might be instrumental in the transformation of the current car system. This will be
555 complemented by steps towards de-privatisation and 'virtualisation' of cars and car
556 use and the replacing of predict-and-provide-models in transport planning with
557 demand-reduction strategies. It could be argued that these changes indicate a
558 broader transformation of the relationship between environment and society, which
559 hinges on the idea of mobility as a public good or shared resource that requires
560 redistributive policies.

561 But technological and policy changes alone are unlikely to make the current car
562 system more sustainable. Mobility is also governed by social norms and rules that
563 are shared, negotiated and internalised and that may help or hinder the transition to
564 more sustainable mobility patterns. For example, the relative unpopularity of public
565 transport vis-à-vis the private car that is prevalent in many developed countries could
566 be seen as indicative of a modern ideology based on liberalism and (economic)
567 individualism. On the other hand, the emergence of gendered mobilities suggests
568 that mobility patterns can both reflect and shape a group's status in society
569 (cf. Grieco et al. 1989; Cresswell and Uteng 2008).

570 To summarise, mobility-centred research in the social sciences implies a
571 theoretical and empirical re-engagement, across different disciplines, with the
572 social, political and environmental processes that regulate the mobility of people,
573 goods and ideas. The unequal distribution of both mobility opportunities and social
574 and environmental risks associated with hypermobility and car dependency in many
575 European countries illustrates the link between environmental justice and mobility.
576 Social research aimed at informing sustainable mobility policies needs to be
577 cognisant of this connection, much more so than is currently the case. The introduction
578 of the concept of 'just mobility' into environmental sociological thinking might
579 help advance the analysis of these pressing social and environmental problems and
580 strengthen sociology's contribution to current sustainability debates.

581 **Conclusions: Towards a 'Mobility Turn'** 582 **in Environmental Sociology?**

583 The desire to clearly demarcate 'the social' from 'nature' has been central to the
584 endeavours of many classical thinkers, albeit perhaps less so than is commonly
585 assumed. Calls for a departure from classical ways of thinking made by proponents

14 (Im)mobility and Environment–Society Relations

of a mobility-centred ‘sociology beyond society’ provide opportunities to reverse some of the conceptual divisions that hamper an improved sociological understanding of environment-society relations. This chapter identified three key features of Urry’s new mobilities paradigm – the rejection of concepts of ‘society-as-nation-state’, the conceptual integration of human and non-human actors and an eclecticist approach to theory-building that moves beyond disciplinary divisions – as possible key points of contact for the ‘mobilisation’ of environmental sociology.

Overall, proposals for a mobility-centred ‘sociology beyond societies’ appear to offer a useful alternative framework for analysing environment-society relations and their socio-cultural and technological causes and consequences. There are, however, some noticeable weaknesses that require attention. First and foremost, it is important to recognise the contradictions that are likely to emerge from an eclecticist approach to social theory formation which characterises the new mobilities paradigm. Attempts to reconcile classical sociological thinking (Simmel) and more recent post-structuralist and systems and networks approaches (Foucault, Latour) inevitably produce new tensions with regard to the structure-agency dilemma or debates concerning the role of intentionality in the performance of everyday social life. Ascribing agency to non-human actors, a prominent feature of Latour’s Actor-Network approach that has also influenced mobilities thinking, has been steeped in controversy and seems irreconcilable with more anthropocentric notions of human agency that dominate mainstream sociological thinking. On the other hand, broadening the concept of agency to include relations between humans, other living beings as well as inanimate objects seems to afford opportunities for a more eco-centric, mobility-focused interpretation of environment-society relations.

The role of technology as a key enabler of corporeal and virtual mobility deserves particular attention by environmental sociologists, in particular because of its complex materialities and their influence on people, place and wider society. This is reflected in the complex socio-environmental consequences of car dependency and ‘hyper-mobility’ in urban and rural areas in Ireland and elsewhere. Problem-oriented transdisciplinary research on transport and mobility offers opportunities for further mobility-focused theoretical work in environmental sociology and sustainable research that moves well beyond more conventional, static concepts of environment-society relations.

Finally, it seems important to further expand the scope of the new mobilities paradigm to take cognisance of global and local political processes and power relations that bring mobility opportunities for some and lack of access and immobility for others. While many of these political processes seem to attest the relative powerlessness of locally embedded social actors in a rapidly mobilising world, they also show the continuous power of territorially bound nation-states vis-à-vis supra-national and global political and economic players. An improved understanding of how global flows of people, materials and information come to be regulated by various political actors thus seems to be a useful addition to the analysis of global environmental problems, including the growing number of environmental refugees. Calls for equal access and a fair and just distribution of mobility opportunities thus tie in with broader questions of environmental justice

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631 and attempts to promote just sustainability policies. It is here that we can expect the
632 greatest benefits arising from a 'mobilisation' of environmental sociology.

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Author Queries

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Queries	Details Required	Author's Response
AU1	Please confirm if this sentence is quoted matter in a section head.	
AU2	Kindly check if it refers to "Castells, M. (1996)." Please note that this is a displayed quote.	
AU3	Kindly note that Latour 1993 is not listed in the References. Please check.	
AU4	Kindly update with volume, year and page range.	

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