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Mobile Methods and the Empirical

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Abstract

In this article we argue that the mobilities turn and its studies of the performativity of everyday (im)mobilities enable new forms of sociological inquiry, explanation and engagement. New kinds of researchable entities arise, opening up a new or rediscovered realm of the empirical, and new avenues for critique. The mobilities paradigm not only remedies the academic neglect of various movements, of people, objects, information and ideas. It also gathers new empirical sensitivities, analytical orientations, methods and motivations to examine important social and material phenomena and fold social science insight into responses. After an outline of the mobilities paradigm, this article provides a wide-ranging review of emergent 'mobile methods' of studying (im)mobilities. We discuss some of the new researchable entities they engender and explore important implications for the relationship between the empirical, theory, critique, and engagement.

Key words

■ the empirical ■ engaged social studies ■ mobile methods ■ mobilities turn

The mobilities turn (Cresswell, 2006; Sheller and Urry, 2006; Urry, 2007) sheds new light on the power and purpose of (critical) social theory. Through investigations of movement, blocked movement, potential movement, and studies of immobility, dwelling and place making, analysts are showing how 'moves' make social and material realities. Attention to the fluid, fleeting, yet powerful performativity of a multitude of everyday (im)mobilities transforms conceptions of sociological inquiry, explanation and critique. In this article we examine some important implications of the mobilities turn for the processes of 'research', and the realm of the empirical. We take it that there is no research and no social science without theory, but at the same time we argue that the mobilities turn folds analysis into the empirical in ways that open up new ways of understanding the relationship between theory, observation, and engagement. It engenders new kinds of researchable entities and a new or rediscovered realm of the empirical, and it opens up new avenues for critique.

The mobilities paradigm is not just substantively different in that it remedies the academic neglect of various movements, of people, objects, information and ideas. It is transformative of social science, authorizing an alternative theoretical

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and methodological landscape. It enables the 'social world' to be theorized as a wide array of economic, social and political practices, infrastructures and ideologies that all involve, entail or curtail various kinds of movement of people, or ideas, or information or objects. And in so doing, this paradigm brings to the fore theories, methods and exemplars of research that so far have been mostly out of sight. The term 'mobilities' refers to this broad project of establishing a 'movement-driven' social science in which movement, potential movement and blocked movement, as well as voluntary/temporary immobilities, practices of dwelling and 'nomadic' place-making are all conceptualized as constitutive of economic, social and political relations.

This analysis of mobilities and especially of multiple and intersecting mobility systems, where each is in an adaptive and evolving relationship with each other, is an example of 'post-human' analysis (see Hayles, 1999). However, arguing that there is a substantive shift from the human to the post-human presupposes that there was really a previous era where the world was 'human' and principally constituted through disembodied and de-materialized cognition. This Enlightenment view presumes a primacy of head over heels, mind over body and of humans separate from and productive of society and culture (Ingold, 2004). A mobilities turn is part of the critique of such a humanism that posits a disembodied cogito and especially human subjects able to think and act in some ways independent of their material worlds (Latour, 1993). This article presumes that the powers of 'humans' are co-constituted by various material agencies, of clothing, tools, objects, paths, buildings, machines, paper, and so on. And thus we have never been simply 'human', let alone purely social (Latour, 1993).

Following Marx, we might say that there are not only the relations of life but also the forces of life, encountering, clashing with, realizing, enlisting, or suppressing the creative power of the material world. Life and matter come to matter (Barad, 2007), and are made meaningful as people, objects, information and ideas move and are (im)mobilized. They may be:

- held in place (prisoner, clamped car, poster, rhetoric figure);
- fixed in place (agoraphobic, building, library book, a sense of place);
- temporarily stationary (visitor, car in garage, graffiti, a presentation);
- portable (baby, laptop, souvenir);
- part of a mobile body (foetus, iPod, ID card, designer label);
- prosthetic (disability assistant, contact lenses, name badge, gender);
- constitutive of a mobility system (driver, road, timetable, speed);
- consisting of code (cyborg, BlackBerry, digital document, computer virus).

Such a classification of mobility modes brings out huge variations in how relations and forces of life might be encountered, realized, enlisted, or suppressed, but in all cases humans are nothing without objects and meanings organized into various systems. The systems come first and serve to augment the otherwise rather puny powers of individual human subjects. Those subjects are brought together and serve to develop extraordinary powers only because of the systems they build and

that implicate them, and especially of those systems that move them, or their ideas, or their information or various objects.

In the following we explicate the mobilities paradigm and then connect it with a review of emergent 'mobile methods' of studying (im)mobilities that make social and material realities. Against this background, we discuss some important implications of the mobilities paradigm for the empirical and delineate new ways of understanding the relationship between theory, observation, and engagement.

The Mobilities Paradigm

Historically, the social sciences have focused upon ongoing geographically propinquitous communities based on more or less face-to-face social interactions with those present. Much social science presumes a 'metaphysics of presence', proposing that it is the immediate presence of others that is the basis of social existence. This metaphysics generates analyses that focus upon patterns of more or less direct co-present social interactions (as shown in Chayko, 2002: 5).

But many connections with peoples and social groupings are not based upon propinquity. There is a substantial empirical realm of 'imagined presence', realized through objects, people, information and images travelling, carrying connections across, and into, multiple other social spaces from time to time (Chayko, 2002). Social life involves continual processes of shifting between being present with others (at work or at home, as part of leisure, and so on) and being distant from those others. And yet when there is physical absence, there may be imagined presence depending upon multiple connections. All social life, of work, family, education and politics, presumes relationships of intermittent presence and modes of absence depending in part upon multiple technologies of travel and communications that move objects, people, ideas, images across varying distances. Presence is thus intermittent, achieved, performed and always interdependent with other processes of connection and communication.

Indeed, we can say that there are five interdependent 'mobilities' that produce social life organized across distance and which form (and re-form) its contours:

- The *corporeal travel* of people for work, leisure, family life, pleasure, migration and escape, organized in terms of contrasting time–space modalities (from daily commuting to once-in-a-lifetime exile).
- The *physical movement* of objects to producers, consumers and retailers, the sending and receiving of presents and souvenirs, as well as the assembly and (re-)configuration of people, objects, and spaces as part of dwelling and place-making.
- The *imaginative travel* effected through talk, but also the images of places and peoples appearing on and moving across multiple print and visual media.
- *Virtual travel*, often in real time, that enables presence and action at a distance, transcending geographical and social distance (e.g. Internet bank transfer, or attending conferences 'in' 'Second Life').

- *Communicative travel* through person-to-person contact via embodied conduct, messages, texts, letters, telegraph, telephone, fax and mobile.

Empirical mobilities research may focus upon one of these separate mobilities, and its underlying infrastructures, but the mobilities paradigm also emphasizes the complex interdependencies between these different mobilities, and the many voluntary or enforced, temporary or long-term, enjoyable or troublesome moments of immobility they entail, that may make and contingently maintain social connections across varied and multiple distances (Urry, 2007). Moreover, it makes the 'moves' that make these (im)mobilities constitutive of economic, social and political relations interesting for study, highlighting how discourses that may prioritize one or other such mobility (such as the belief that business has to be done 'face-to-face') simplify – rather than explain – such relations.

Mobilities involve fragile, aged, gendered, racialized bodies. Such bodies encounter other bodies, objects and the physical world multi-sensuously. Travel always involves corporeal movement and forms of pleasure and pain. Such bodies perform themselves in-between direct sensation of the 'other' and various sensescapes. Bodies are not empirically fixed and given but involve performances to fold notions of movement, nature, taste and desire, into and through the body. Bodies sense and make sense of the world as they move bodily in and through it, creating discursively mediated sensescapes that signify social taste and distinction, ideology and meaning.

The body senses as it moves, through kinaesthetic skill, merging sensory experience that informs one what the body is doing in space through the sensations of movement registered in joints, muscles, tendons and so on with intention and bodily memory (Merleau-Ponty, 1962; Dant, 2004). It combines with touch (of the feet on the pavement or the mountain path, the hands on a rock-face or the steering wheel), sight, hearing, smell and other sensory impressions to perform the body's motion, as well as intense emotions, including pleasure (Sheller; 2004), passivity (Bissell; 2007) or irritation (Lupton, 1999). Various objects and mundane technologies sensuously extend human capacities into and across the world. There are various assemblages of humans, objects, technologies and scripts that contingently produce durability and stability of mobility. They reflexively shape sensory experiences as technologies emerging in the modern world provide various ways of framing impressions: from the views afforded by the windows of a railway carriage, the car windscreen, the aeroplane, or the camera/camcorder viewfinder (Urry, 2002, 2007), to the safety of speed (Sheller, 2004; Noble, 2007), the 'extreme' thrill of riding a surfboard (Dant and Wheaton, 2008), praxiological issues of orientation (Brown and Laurier, 2005) or the sense of travel time created by rail passengers with their laptops, books, sweets, and music (Watts, 2006). Such hybrid assemblages roam countrysides and cities, remaking landscapes and townscapes as they move.

And, on occasions and for specific periods, face-to-face connections are made through often extensive movement, and this was as true in the past as it is now. People travel to meet face-to-face and these moments of co-presence need

explanation. Among the processes that generate face-to-face meetingness (Urry, 2003), five are particularly powerful. These are formal – legal, economic and familial – obligations to attend official meetings; social obligations to meet and to converse often involving strong expectations of presence and attention of the participants; practical obligations to be co-present with others to sign contracts, to work on or with objects, written or visual texts; experiential obligations to be in and feel a place 'directly' through movement and touch; and emotional obligations to experience a 'live' event that happens at a specific moment and place. These obligations can be very powerful and generate what Durkheim termed 'effervescence' (1915). Chayko describes this as a 'powerful force or "rush of energy" that people sometimes feel within them in circumstances of togetherness' (2002: 69–70). Such empirical feelings of intense affect generate a compulsion to travel, often at specific times along particular routes.

Mobile Methods

Elsewhere, Law and Urry (2004) have shown how

> [Existing methods] deal, for instance, poorly with the fleeting – that which is here today and gone tomorrow, only to re-appear again the day after tomorrow. They deal poorly with the distributed – that is to be found here and there but not in between – or that which slips and slides between one place and another. They deal poorly with the multiple – that which takes different shapes in different places. They deal poorly with the non-causal, the chaotic, the complex. And such methods have difficulty dealing with the sensory – that which is subject to vision, sound, taste, smell; with the emotional – time-space compressed outbursts of anger, pain, rage, pleasure, desire, or the spiritual; and the kinaesthetic – the pleasures and pains which follow the movement and displacement of people, objects, information and ideas.

In order to deal with these difficulties, it is necessary to develop research methods that are 'on the move' in two senses. First, researchers will benefit if they track in various ways – including physically travelling with their research subjects – the many and interdependent forms of intermittent movement of people, images, information and objects (Sheller and Urry, 2006). This has not been previously articulated, although Marcus' 'multi-sited ethnography' approaches some of this when he refers to 'chains, paths, threads, conjunctions, or juxtapositions' (1995: 105). Second, as a consequence of allowing themselves to be moved by, and to move with, their subjects, researchers are tuned into the social organization of 'moves'. Investigations of how people, objects, information and ideas move and are mobilized in interaction with others reveal how actions – like moves in a game – are oriented towards, and reflexively shape, 'grammars' or orders of social, economic and political relations (Wittgenstein, [1953] 1988; Garfinkel, 1967). By immersing themselves in the fleeting, multi-sensory, distributed, mobile and multiple, yet local, practical and ordered making of social and material realities, researchers gain an understanding of movement not as governed by rules, but as

methodically generative. This makes it less interesting to find and define 'underlying' grammars, orders, rules or structures but rewarding and challenging to describe the methods that people (but also material agencies, e.g. through design) use to achieve and coordinate grammatical orientations and the making of orders (see also Law and Mol, 2002). In the process, researchers are developing a powerful new kind of social science. We will discuss the premises, promises and risks of this after a broad-ranging (although necessarily selective) review of the various forms these emergent mobile methods of empirical research take.

First, there is 'observing' people's movement, their strolling, driving, leaning, running, climbing bodies, bodies lying on the ground, photographing and so on, a method Goffman especially undertook. Marcus refers to this as 'following the people' (1995). It involves directly observing mobile bodies through overt methods such as 'shadowing' others, or covert methods that involve in effect sociological 'stalking'. Such observations through the eye may be enhanced through digitally enhanced observations (Bærenholdt et al., 2004). Especially significant is observing how people effect face-to-face relationships with other people, with places, and with events. Mobility involves occasioned, intermittent face-to-face conversations and meetings within certain places at certain moments that seem obligatory to some or all of the participants. Observation can be augmented by interactional, conversational and biological studies of how it is that people read and interpret the face of the other, as well as the body more generally (Hutchby, 2001). Studies reveal the 'scenic intelligibility' of people's movements, meetings, and leave-takings (Jayyusi, 1988) and the 'ethnomethods' by which such scenic intelligibility is achieved (Garfinkel, 1967).

Empirical research involves identifying the importance of the 'face' during periods of family, or friendship or professional separation (see Larsen et al., 2006). A key finding is that trust is not just a state of mind, or once-and-for-all accepted dependability, but an ongoing practical achievement. People come to trust other people because they continuously (often precognitively) observe and probe their behaviour in different situations (Boden and Molotch, 1994), relying on the fact that embodied human conduct is richly accountable. Accountability, in this sense refers not just to the fact that people may be held to account for their actions, but also to the fact that every move people make is an account of how they read and orient towards the situation at hand. In face-to-face interaction, eyes, gestures, touch as well as the sensitivity to fit words and moves into the unfolding interaction carefully betray thoughts, intentions, emotions, personality, social relations. To maintain trust, people need to – at least intermittently – meet and experience the effervescence of this collaborative live performance. But embodied conduct is also 'broadcast communication' (Büscher, 2007), enabling others to make sense of (some of) the same thoughts, intentions, emotions, social relations from a distance.

Second, there are several ways of participating in patterns of movement while simultaneously conducting research. This can, for example, involve what Morris terms the method of 'walking with' that he deployed in research with farmers in Peru and the Yorkshire Dales (2004). Such 'walking with' people involves

sustained engagement within their worldview (see Cass et al., 2003) and can reveal the emplacement of professional judgements (Büscher, 2006), emotional attachments, activity patterns and lifestyle possibilities. Through such 'co-present immersion' the researcher moves within modes of movement and employs a range of observation and recording techniques. Laurier uses this in his research on office working 'on the motorway' doing a 'ride along' (2004; see Kusenbach, 2003: 464, on the 'ride along'), or more generally in the ordinary organization of car travel (Laurier et al., 2008). It can also involve 'participation-while-interviewing' as Bærenholdt et al. (2004) show in their research on mobile tourists in Denmark. Here the researcher first participates in patterns of movement, and then interviews people, individually or in focus groups, as to how their diverse mobilities constitute their patterning of everyday life. Kusenbach (2003) describes and elaborates the 'walk along' as an ethnographic research tool that enables the development of a 'street ethnography'.

Mobile ethnography draws researchers into a multitude of mobile, material, embodied practices of making distinctions, relations and places. Rarely is this more acutely experienced than through mobile video ethnography, where people's moves in interaction with others and their environments have to be anticipated by the positioning of the camera's viewfinder. Exploring the work of visual anthropologist Jean Rouch, Douglas Macbeth shows how the continuous shot can reflect the anticipatory-responsive, analytical-participant character of participant observation as an 'inquiry from within the social order' (Macbeth, 1999: 163, see also Mohn, 2002). Büscher (2005) shows how such inquiry from within can inform explorations of futures through collaborative analysis and innovation projects, where the portability of video data produced by researchers on the move enables ethnographically informed participatory design. Analysis and design grounded in rich audio-visual records of lived practice can provide inspiration for 'appreciative interventions' (Karasti, 2001) and collaborative innovation that moves more mindfully across the boundaries that divide design and use (Suchman, 2007). As we will discuss later, the combination of mobile ethnography and collaborative innovation resonates with 'engaged' programmes of sociological research in science and technology studies (Sismondo, 2007) and public sociology (Burawoy, 2005).

A further method is keeping time-space diaries in which respondents record what they are doing and where, how they move during those periods and the modes of movement (Kenyon, 2006). Such a diary enables researchers to plot, for example, how the household, and indeed different household members, move through time-space and perform activities that are intermittently on the move (see Bærenholdt et al., 2004: Chap. 4). The diary can be textual, pictorial or digital or some combination. The use of mobile voicemail-diaries (Palen and Salzman, 2002) or wearable automatic time-lapse cameras (Harper et al., 2008) has the advantage that subjects do not have to interrupt their (mobile) activities to reflect upon and note down where they have been, but can record audio-visual diary entries on the move. Moreover, 'automatic diaries' such as Harper et al.'s SenseCam can provide insights that are 'at once different to the experiences recollected by

participants and yet [bring] a sense of wonder, depth and felt-life that [is] strangely enriching'. Like video, diaries also lend themselves to collaborative analysis with research subjects, who can reveal a picture of daily lives and movements that would be difficult to construct through unaided reflection. In a reflexive move the researcher's own trajectories of travel and affordances may also be interrogated through diary research in order to examine how they are generated on the move and how they move along with those others that are being researched (Watts, 2006).

Then there are varied methods that explore the imaginative and virtual mobilities of people through analysing texting, websites, multi-user discussion groups, blogs, emails and listserves (Wellman and Haythornthwaite, 2002). Miller and Slater (2000), for example, explore how using the Internet has become so integral to 'being Trini' that Trinidad has fused with its virtual 'locations' on the Internet, and Molz (2006) tracks the interplay between travellers' websites and blogs and the corporeal travel of round-the-world-travellers. This research involves web-surfing, in-person and e-mail interviewing, and interaction in interactive sites and discussion groups. Beyond the Internet, art and design interventions enable experimental appropriation of prototypes of mobile games, mobile content generation technologies, location tracking and context-sensitive technologies and make sociological research of emergent mobile futures possible (Benford et al., 2006; Coulton et al., 2006; Hemment et al., 2006; Ciolfi and Bannon, 2007; Licoppe, in press; Büscher et al., 2008). A key challenge here is the multi-sited nature of activities. While ethnographers may be moving with some participants in physical space, their research subjects' communication and movements in virtual spaces are often not easily available to the researcher. Record and replay of digital activities in combination with analysis of ethnographic experiences are one way of tracking the multi-sited, collective or collaborative action of distributed mobile participants (Crabtree et al., 2006).

Much movement involves experiencing or anticipating in one's imagination the 'atmosphere' of place or places, including, as Ferguson details in the case of social workers, undertaking home visits which are a 'deeply sensual experience' (2006: 10). Such atmosphere is not reducible to material infrastructures nor to discourses of representation. Re-creating the nature of a place's atmosphere and its appeal or repulsion to imaginative travel necessitates the use of multiple qualitative methods including especially literary, artistic and imaginative research (De Botton, 2002; Bærenholdt et al., 2004; Halgreen, 2004). Comprehending the atmosphere or 'feeling' of particular kinds of movement often features in the imaginative travel (often through poetry and literature) of migration, exile and displacement across substantial geographical distances and boundaries.

The need to describe places or situations also arises routinely as part of conversations, and just how they are described critically indexes and shapes not only the recollected places and situations, but also defines the situation at hand, the relationship of the speakers and the future of the interaction (Schegloff, 1972). Formulating places takes on specific forms, for example, when giving directions (Psathas, 1991), and when talking on a mobile phone (Laurier, 2001; Weilenmann,

2003), and when there is a demand to assemble fragmented and mobile geographies. Formulating places and situations has a particularly urgent and complex character as part of work in emergency calls (Fele, 2007; Mondada, 2007) and in making sense of incident reports en-route (Landgren, 2005), where accurate awareness of the situation and of physical locations has to be produced from often incomplete accounts provided by interlocutors under duress. The formulations produced are critical for guiding speedy and accurate movement of help and resources. Conversation and interaction analysis and investigations of how people augment verbal descriptions with visual, cartographic, textual as well as technological information (e.g. GPS coordinates, Büscher et al., 2008) can inform our understanding of how situation awareness is produced and folded into the mobilization of resources.

Much mobility involves the active development and performances of 'memory' that 'haunt' people, places and especially meetings. Recovering such memories necessitates empirical methods that qualitatively investigate how photographs, letters, images, souvenirs and objects are deployed within large social groupings or within family and friendship groups (Larsen, 2005, 2008). This can involve researching the pictures and objects that people carry with them and which can then be used to reassemble memories, practices and even landscapes in their varied sites of dwelling. However, as much of this is familial or private, there is a major research challenge to get inside such private worlds and to excavate those 'family secrets', through often complex and difficult conversations, especially about places of loss or desire (Kuhn, 1995).

Methods also need to be able to follow around objects, what Marcus calls 'follow the thing' (1995). This is because objects move as part of world trade which increasingly involves complex products; objects move in order to be combined into other objects (such as the components of a computer that travel the equivalent of a journey to the moon); some objects travel and lose their value (cheap souvenirs) while others enhance their value through movement (an 'old master': Lury, 1997); and as objects travel, their cultural significance can grow as they accrete material and symbolic elements. Lash and Lury describe the appropriate methodology as involving a cultural biography of objects (2006). Also the geographical flows of messages and of people can be tracked through the use of GPS and other technologies involved in contemporary communications (Licoppe 2004). Social positioning methods are likely to develop over the next few years which will enable the digital mapping and measuring of people's space-time movements through streets, buildings and neighbourhoods, through an unintended effect of a 'digital panopticon' (see, for an example, Ahas and Mark, 2005). But clearly, such surveillance is not an effect of the technology, but a co-production of human and non-human actors with room for resistance. Attention to people's mobile methods reveals, for example, how personnel in London Underground operation rooms 'configure scenes to make sense of and interpret the conduct of the travelling public in organizationally relevant ways' (Heath et al., 2002). In response, the travelling public resists scenic interpretations or surveil the surveillors (Mann et al., 2003).

Studies of such 'interactional adaptations' achieved in engagement with technologies and objects on the move (Esbjörnsson et al., 2007), also highlight that following the object, the people, memories, ideas or information reveals the intertwining of diverse mobilities. Such interactional adaptations and multiple mobilities can create 'interspaces' – places created on the move, in-between events, in-between origins and destinations (Hulme and Truch, 2005).

But even 'real' places are not so fixed: Implicated within complex networks (as researched in Bærenholdt et al., 2004), places can be dynamic – 'places of movement' (Hetherington, 1997, see Wong, 2006, on nineteenth-century Singapore). They are not fixed within one location, but move around as geographies are stretched, contracted and folded through the opening or closure of airports, news of conflict or environmental devastation, the award of favourable ratings in newspaper travel pages or online blogs, or the algorithmic logic of search engines (Molz, forthcoming). Places move within networks of human and non-human agents. Such hybrid systems that contingently produce distinct places need examination through methods that plot, document, monitor and juxtapose places on the go (see Sheller and Urry, 2004, for various examples of such 'moving places').

Finally, research can examine how multiple tracks of people pass through various 'transfer points', places of in-between-ness. This is where 'populations' who are mobile can be monitored by various agencies charged with policing that territory; and simultaneously can be researched since they are temporarily immobilized – within lounges, waiting rooms, cafés, amusement arcades, parks, hotels, airports, stations, motels, harbours, and so on. These transfer points necessitate a significant immobile network that is partly concerned to effect surveillance of intermittently moving populations. In a way the social scientist can also use those moments of slowed down visibility in order to assemble their analysis of, or surveillance of, those moving populations. Material objects too move through such transfer points and they too can be tracked (and researched) as they move through such nodes. Especially significant is that they are often slowed down as often populations are also slowed down (Kesselring, 2006).

On the Move: The Mobilities Paradigm and the Empirical

> The true unity of apprehension is secured
> only by . . . a dissolution of dogmatic
> rigidity into the living and moving process.
>
> (Georg Simmel, 1907, p. 110)

We have described some innovative and important new research orientations that shape the new mobilities paradigm, sketched some of the new researchable entities that are emerging from this and mobile methods of studying them. Especially significant in the development of this new paradigm were the varied writings of Simmel (e.g. 1907). Some elements of his ideas were developed within

the Chicago School which in the first half of the twentieth century provided a range of post-Simmelian mobility studies especially concerned with the itinerant lives of hoboes, gangs, prostitutes, migrants and so on (see Park, 1970). However, this development was cut short in its tracks as a range of structural or static theories took over within sociology, including structural functionalism, positivist analysis of 'variables', structural Marxism, and so on. Meanwhile the study of mobilities turned into the professional examination of 'transport' and to a lesser extent of 'tourism', that were taken to be differentiated and specific domains to be researched far away from the provocative promptings of Simmel's essays.

But over the past decade or so influential new initiatives like the ones we have described in this article have begun to creatively re-appropriate Simmel's work and studies by symbolic interactionists from the diverse perspectives of more recent approaches such as cultural studies, science and technology studies, ethnomethodology, (participatory) design and more. These can chime together constructively as a mobilities paradigm that significantly develops the relationship between the empirical, theory and method. In what follows, we delineate some of the premises, promises and risks of these developments and discuss how they resonate with Simmel's ideas, but also other key concepts, opening up new ways of thinking. Before we do so, a caveat. This is not an attempt to reconcile or resolve the conflicts between the many very different theoretical motivations and orientations we see contributing to a mobilities paradigm. Some of the differences between the approaches that come together as the mobilities paradigm are irreconcilable and there are incompatibilities and contradictions that challenge as well as shape mobilities research. Nevertheless, there is a powerful transformative and 'therapeutic' potential for social science in the interferences generated where these studies meet and gather emergent empirical sensitivities, analytical orientations, methods, instruments and motivations to examine important social and material phenomena. As such, what we describe below is in part an observation of emergent trends within social science and in part a vision and personal research programme.

When researchers follow Simmel's call for the 'dissolution of dogmatic rigidity into the living and moving process', and 'mobilize' their studies, they do and experience empirical enquiry, theory and critique differently, and re-define established principles. We map out some key features of the new empirical, theoretical and methodological landscapes thus created under three headings.

Cutting Complexities

Mobile sociology recognizes the need for studies that refuse the simplistic opposition simple/complex in their empirical approach as well as in their expressions of insights. There have been enough 'denunciations of simplicity' (Law and Mol, 2002), and the investigations we have listed here mindfully negotiate different kinds of simplifications and expositions of complexities; they remain attentive to the foregrounding and backgrounding that are inherent in the formulating that their inquiries and their accounts inevitably do, and they enable glimpses or

archaeologies of the complexities that they exclude. This quality shines through the individual studies, and it is amplified in their gathering. A multitude of new researchable entities are 'cut' (Barad, 2007) from entangled im(mobilities), including:

- fluxes and flows, passivity, dwelling, place-making;
- moves and ethnomethods of creating and seeing scenic intelligibility;
- the importance and effervescence of co-presence;
- the relation of (imagined) presences, absences, deferrals;
- practically achieved phenomena of trust, emotion, appreciation;
- the emplacement of professional judgement, affect, and sense-making;
- boundaries between multiple presents and futures, users and designers, critique and engagement;
- patterns of movement recalled or automatically recorded;
- sensory experiences;
- practices of seeing, imagining, remembering, formulating places;
- the cultural biographies of objects;
- interactional adaptations and adoptions of new mobile technologies;
- interspaces, places on the move.

Newly or differently noticed as part of an analytical orientation to movement in all its diverse modes and dimensions, these phenomena arise from and inspire studies that make a difference. Most importantly, these studies powerfully augment a long tradition of studying epistemic practices (Lynch, 1993; Law and Mol, 2002; Barad, 2007). Like 'epistemic sociology' (Lynch, 1993), mobile sociology looks at a pervasive array of practices that connect, affect, divide, and leave traces and that are foundational to human existence and experience. But mobile sociology highlights that while it is important to study how worlds are made in and through the ways in which people make sense of them, it is equally important to investigate how worlds (and sense) are made in and through movement and motion. By doing so on the move, mobilities studies provide fresh analytical leverage to important opportunities and challenges including many of the leading global issues, of world food shortages, global terrorism, climate change, new genomics, the 'virtual', and so on.

Inquiry on the Move

Studies of movement, blocked movement, potential movement, and investigations of immobility, dwelling and place-making not only illuminate important phenomena, they also provide compelling new modes of knowing. Inquiries on the move – like the shadowing, stalking, walk alongs, ride alongs, participatory interventions and cultural biographies we have described – enable questions about sensory experience, embodiment, emplacement, about what changes and what stays the same, and about the configuration and re-configuration of assemblies of objects, spaces, people, ideas and information. Especially gathered together in larger numbers as they are here, such studies undermine attempts to press the

empirical into service only as evidence in support of general explanations. Instead, they serve as 'modes of relating that allow the simple to coexist with the complex, . . . of describing the world while keeping it open' (Law and Mol, 2002: 16). But inquiries on the move can also – more easily than others – become 'inquiries from within'. To 'follow the people', analysts rely on developing skills to understand 'indigenous' mobile methods, employed by those whose mobile activities they study to organize their movements. For example, to understand how people navigate within and orient to the scenic intelligibility of interactions in public as well as virtual spaces, analysts must learn to recognize and register what guides people's moves. For many forms of research – interviewing while walking, virtual and video ethnography – the researchers' skill needs to be acute enough to enable them to anticipate their subjects' next moves. Analysts being 'on the move' in this sense create a kind of 'double transparency' that allows them to study and describe mobility phenomena in the making while simultaneously drawing the methods used in their production to their own and their audiences' attention (Lynch, 1993). This double transparency is another mode of analytic representation that keeps crucial complexities in the picture. But while complexities are an increasingly recognized analytical 'good', they are also a source of many troubles.

From Critique to Engagement

It seems such a commonplace to think that 'Social change requires, first and foremost, an understanding of social processes' (Rawls, 2002: 19). Yet this assumption underpins decades of debate about the critical role of social science. The mobilities paradigm, in concert with the perspectives that contribute to it, especially cultural studies, science and technology studies, globalization studies, ethnomethodology, (participatory) design and others, provides an important pause for thought at this juncture. These perspectives offer ample evidence that social change is inescapable, pervasive, and to a large extent uncontrollable. Moreover, they show that studies of social processes often do not provide an overview, or understanding that can explain events in any traditional sense of the word. Even with hindsight, the best (in the most positive sense of the word) social scientists can do is reveal the complex interconnections and dynamic interdependencies that make events happen in the way they do. Against this backdrop, the claims of critical social science can sound hollow (Pleasants, 1999). However, at the same time, the mobilities paradigm, particularly through its immersive and at the same time analytical momentum, enables researchers to critically engage with the people and the matters they study in novel and highly effective ways, and to orient critically towards the future, not only the past. Many of the studies that make the mobilities paradigm are ethnographic (or are 'mobile' ethnographies) and thereby intrinsically connected into practice, many are part of collaborative innovation projects, art and design interventions, or form part of policy advisory panels, programmes and literatures. While the ways in which mobilities researchers inform, and participate in, social and organizational change and/or the design of

physical or virtual spaces and technologies are by no means simple, their involvement in the shaping of futures allows social scientists to fold empirical analysis into social and material change. Although not uncritically, these studies are highly relevant to the public sociology called for by Michael Burawoy (2005) and they provide a mobilities-sensitive and sensitizing interpretation for an engaged programme in science and technology studies (Sismondo, 2007).

In conclusion, the mobilities paradigm enables a step change in critical social theory. It makes clear that cultural studies, globalization studies, anthropology, the sociology of knowledge, now science and technology studies are not enough to 'explain' performativity, complexity, chaotic yet ordered social and material realities. It is not just about how people make knowledge of the world, but how they physically and socially make the world through the ways they move and mobilize people, objects, information and ideas. Through critical engagement in and through mobilities studies, researchers are making a difference to the ways in which (im)mobilities are conceived of in research, design, and many areas of public policy (as many articles in the new journal *Mobilities* seek to do).

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