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**To John Urry, whose intellectual legacy and inspiration continues to motivate our work**

# Chapter 14

## Drawing mobile shared spaces: Brighton bench study

### Introduction

Drawing plays many roles in relation to design; recording, reflecting, capturing and creating situations and conditions that are measurable as well as those that are perceived and conceived.

Drawing is a ‘frame of the imagination’ (Farrelly 2011) allowing us to envisage relationships that are not usually visible and to consider and test both the probable and improbable. Architects and urban designers use drawing to think about spatial arrangements in the city, to develop the mental constructs of potential occupations in urban spaces. Drawing has been used as a method of data gathering, a pedagogical research tool (Bagnoli 2009) and also has been incorporated into the field of mobilities (Cresswell 2006; Sheller and Urry 2006; Urry 2008) with the emergence of mobilities design (Jensen 2014).

Taking inspiration from Appleyard Lynch and Meyer’s *The View from the Road* (1964), this chapter illustrates the potential of drawing to both ‘capture’ and to interrogate the complex relationship between the design and mobile practices of street space, particularly street environments that have been designed to re-imagine the relationships between walkers, cyclists, car users and others in mobile space. Our examination of a specific shared street space—New Road in Brighton—aims to contribute to ‘new ways of seeing’ the interfaces of design and situated mobilities: movements and their meaning that are contextualised in social and cultural space. We seek to capture how the mobile practices performed within designed street spaces are the means by which built form is known, whether by the moving eye scanning space, by the feel of surface through the feet or via the body of the vehicle, the effort or ease in covering the ‘ground’, or the shifting proximity and

arrangement between people and surfaces. In particular, we deploy material from a 24-hour ‘bench survey’ in New Road to investigate these ideas.

## Understanding designed street space

Drawing upon Lefebvre (1991; 2004) we are interested in the ways in which urban encounters are situated within streetscapes that echo power hierarchies; they are mediated by the contingencies of social space. Although we are very much concerned with materialities and their assemblages, we also recognise the importance of the differentiated subject and the significance of social difference in producing urban space. Lefebvre’s (1991, 2004) conceptualisation of space allows attention to intersections between the impositions of differential imbrications of power on public space, with embodied experiences and urban imaginaries. In particular, rhythm analysis (Lefebvre 2004) allows a focus on embodied practices and a mindfulness of the relations of power in which they are situated. Mobile practices are embodied and multi-sensory and at the same time urban spaces are produced through sensory experience (Degen and Rose 2012). Nuanced accounts of the situated and embodied nature of mobile practices in street space, we argue, are revealed through drawing. We can begin to unravel practices of power, mobility and space through attending to both sensory experiences and the ways in which movement is produced through it (Howes 2008). Degen and Rose (2012) argue that both academic and policy discourses around the use of urban space, are based on the experience of *design* with less on sensory experience of designed spaces.

Our interest in this chapter is in the intersection of embodied experience and situated urban design. We draw upon studies of the significance of sensorial encounters in the twenty-four-hour city (Adams et al. 2007), seeking to examine the city as experienced by all senses, not solely the visual; looking at how sensory experiences become mediated by ‘different and shifting spatial and temporal practices’ (Degen and Rose 2012, 3), by practices of spatial mobility and memories of previous experiences of place. Sensorial experiences of space are produced through the encountering of the material and cultural characteristics of the space, the ways spaces are configured and felt by seeing,

hearing, smelling touching and tasting. In turn, emotional responses to space are dependent on these sensory moments. The contention, and challenge, here, therefore, is that we need to develop an understanding of the sensory, and thereby emotional dimensionality of space through a transdisciplinary approach that draws from both the social sciences and arts and humanities through geographies of the senses (Degen and Rose 2012); sociologies of the senses (Simmel 1907); and through sensory design and architecture (Malnar and Vodvarka 2003; Pallasmaa 2005). Sensory ethnography is used as a framework for understanding multisensory spatial practices where ‘the senses are not separated at the point of perception, but culturally defined’ (Pink 2009, 13).

### Researching street space through drawing

In order to develop understandings of emotional and embodied encounters in street space, we argue that drawing offers an alternative way of seeing to more traditional means of ‘capturing’ spatial encounters. We are concerned here with ‘visuality’: an ‘understanding of images as meaningful objects central to symbolic and communicative activity that is core to many theorizations of contemporary visual culture’ (Rose 2014). Rose argues that researchers using visual research methods have paid little attention to visuality. In drawing through a continuum from fieldwork to analysis, we direct awareness to the symbiotic relationship between the visual method and the visual culture where, as Rose contends, there is the potential of a shared understanding of images as tools to understand communicative work. Public and mobile spaces are often evaluated using traditional research methods, which overlook the nuanced use of space and the intersections between social and material interactions that influence its use in a particular way (DfT 2009; Gehl 2007).

Our approach seeks to fuse innovative methods from both social science and arts and humanities to explore situated encounters in the street. The wider research on which this chapter is based adopted an interpretative and interactionist approach drawing from methodologies and methods in both the social sciences and architecture<sup>1</sup>. It is based on a theoretical frame that incorporates everyday social,

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<sup>1</sup> This chapter is based on an ongoing study of New Road in Brighton, which has been undertaken through the University of Brighton Masters in Architecture and Urban Design and a 24-hour ethnography of the bench that runs along New Road.

embodied and material experiences of public space; observations and readings of public space by users and non-users; and points of friction in the material/social interface (De Certeau 1984; Goffman 1966; Lefebvre 1991; Merleau-Ponty 1962)). Given that the research focus was upon interactions in relation to the inhabitation of space, we were as interested in the moving in and 'resting in' or 'being in', as the moving through.

### Revealing rhythms through drawing

The multisensory practices of space are revealed in different ways at different scales of seeing. De Certeau (1984) illustrated the disparities of vision of the panoptic gaze and the zoomed in street level gaze of the ethnographer. Lefebvre (1991) on the other hand asks us to zoom out from this micro scale, to the 'window', where an optimal gaze gives us a view of the micro-socialities of social space but also of the context in which these practices take place. Zooming in and out therefore illuminates the disjunction between the overall 'pattern' of movements seen from a distance and the quirks of individual movements when seen close up/in detail – and the differences of space/time.

Jensen (2014) has illuminated the role of storytelling in mobilities design as a way of interpreting and producing the urban environment, from Vannini's (2012) 'narrative of theory and ethnographic findings' to Marling's (2003) inspiration in the 'songline' as a means of navigation of the environment by Australian aboriginals. Storytelling is integral to ethnography, as it is integral to everyday life. It is partly for this reason that the two-dimensional image is considered 'completely inadequate for capturing the dynamism of a mobile situation' (Jensen 2014, 28). Nevertheless, Jensen (2014, 28) acknowledges the role of the image as an 'active design tool' using Cresswell's (2006) elaboration of the production of mobilities through representation and his analysis of the work of photographers Marey and Muybridge. Other photographers, pioneers of ethnographic urban study, such as Jacob Riis (1890), have moved beyond the image as flat representation to its practice in mobilising concern for new urbanites living in poverty (Green 1985). Similarly, architects and other spatial designers, urban designers and landscape architects, use images as a design tool in this

way, although more commonly in combination with other representational methods such as drawings.

Landscape designer and academic James Corner produces highly complex drawings from a composite of images that at least in part provide a sense of the experience of place at a specific moment: for example burning the stubble in a field is captured through the inclusion of a plan of the contours of the land, a photographic image of burning material that evokes the smell, a drawn scale of temperature and the wind direction is shown in relation to the plan. The drawings suggest at least one register by which measurements may be made (temperature or wind speed or direction etc.). The composite, multi-scalar image is produced digitally. The engagement of making by hand is less removed and more open to subtle inflections and these may be seen as valuable, especially in examining relationships in detail and at the scale of urban spaces. We look to understand architectural space and form through the closer connection of body to form and space, in both the kinaesthetic and the imaginary senses. We are partly concerned here with Jensen's (2014) use of drawing (from Dovey DATE?) as disentangling. Drawing is also, as Ingold (2011, 177) argues, 'fundamental to being human – as fundamental as are walking and talking', 'because even without a pencil we are drawing with our bodies – making paths, gesturing, communicating, leaving trace or trails.' From this, Jensen (2014) argues that diagrams help us to articulate thoughts, to produce thoughts and help form conceptual frameworks.

But, of course, the diagram, used as a tool in spatial design, is a highly ambiguous and contested form of communication, with the potential to mean almost anything to almost anyone and even to become unfathomable to the author of the diagram<sup>1</sup>. The diagram may be representative but not 'accurate' or objective; diagrams may indicate an existing situation or a future, imagined situation – or even both simultaneously, thus revealing or suggesting shifts in both time and place. While Jensen (2014, 42) is more interested in considering, and trying out, the diagram as a design tool

‘...as practical tool and powerful mental technique’, the element of experimentation is acknowledged as outside his normal way of working. As we have just mentioned, drawing is as natural as walking and talking and may be considered an equally essential communication tool. Ingold (cited by Jensen 2014, 45) claims that ‘most contemporary architects love to draw but hate to write.’ Is this in part because of the relative openness of interpretation of drawings as opposed to the pressures of being clearly understood with the written word? The diagram, as opposed to a realistic representation of space, also allows more scope for the imagination. In Jensen’s (ibid., 42) discussion there are clearly acknowledged tensions between thinking of diagrams as ‘representational’ or ‘vehicles for thinking’; as he acknowledges, the diagram can look deceptively simple and indeed simplistic, lacking ‘multisensate and emotive dimensions...’.

Diagrams can be used in multiple ways, frequently as visual clues and reminders. But there is a danger that the aesthetic of such diagrams may deceive and become generators of projects that have their own internal logic without taking account of real contexts. Jensen (2014, 45) talks about ‘design analysis’ in his discussion about the use of his diagrams but this seems to be a contradiction in terms. The sequence of the spatial design process might be simplified as follows: observation, documentation (mapping, filming, photographing etc), analysis and design response, incorporating the manipulation and development of a range of media. An in depth understanding of an existing situation and responding to it in terms of design are interdependent aspects of the process of design. Diagrams tend not to take account of the micro mobilities that take place in negotiating spaces; that is between bodies, bodies and things both static and moving, so we must develop other images and drawings that can take account of these effects.

As we indicate below, our scale of vision and the methods we employ to capture it allow attendance to the rhythm-analysed negotiation of space (Lefebvre 2004; Vergunst 2010). For Lefebvre rhythm originates in the body - in the rhythms of the body, the breath, the heartbeat. The body under

capitalism is a central theme – but rhythmanalysis also allows a contextualization in relations of power - how embodied rhythms intersect with rhythms of authority and control. Lefebvre talked of the slowing down of rhythms at night, the normative rhythms of urban encounters. And so the street is ordered through particular authoritative controls even where ‘the orderly street has given way to a multitude of interweaving routes and improvisational lines’ (Vergunst 2010, 381). Here we make visible a more consistent rhythm as time and space converge in a reconfigured differentiation of space in which the normative diurnal rhythms are disrupted. Our mode of capture is visual with this understanding of images as ‘meaningful objects’ that produce visual culture (Jensen 2014; Murray and Upstone 2014). Rather than flat and static representations the images become part of the mobile practice, they are implicated in the space and the mobile doing that are part of it. As Lefebvre (2004, 25) intended, rhythmanalysis brings together ‘diverse practices and very different types of knowledge’ and so here we bring together ethnographic and graphic knowledges in revealing the assemblage of urban encounters (Vergunst 2010).

### Drawing rhythms

In *The Manhattan Transcripts*, Tschumi (1978) explores a tripartite representation of engagements with space, placing photographic image, drawn plan and diagrammatic representation of movements in the space alongside each other – allowing these three modes to be read more or less simultaneously and thus suggesting the over layering of different registers that combine to create a multidimensional understanding of place and time (see also Tschumi 1981). This method, in its fragmentary, episodic but also sequential sensibility has a strong relationship to the cinematic experience of automobilities first explored in detail by Appleyard Lynch and Meyer in *The View from the Road* (1964). In Lynch’s earlier work (1961) the diagrams were describing ‘mental maps’, however these were the results from asking hundreds of people about how they navigated cities and the diagrams are therefore an ‘average’ or ‘typical’ mental map. In later work Lynch (1981) adds the representations of power relations and their spatial implications to his diagrams. He describes the changed pattern of cities from the previous diagram of cities radiating from one centre, to a more complex machine-like system of multi-centered interconnected enclaves. He indicates that

these connections may vary in terms of their significance, pace and extent. These later diagrams of extension ‘represent the spacing and interval between objects, a matter of great importance in the modern city with its accelerated personal mobility.’

While Lynch (1981) describes each of the enclaves as mono-functional, it is possible to view specific street spaces as multi-functional: spacing and intervals are overlaid in both time and space, allowing us to reconsider the rhythm of the flows in a particular place. Drawing allows us to present intersecting rhythms, to show the ways in which, just as embodied rhythms coalesce, abut and diverge so too do they intermingle with the rhythms of the material. At our case study bench on New Road, we can consider, for example, the wet or dry bench; the duration of micro indentations along its length from those who come into contact with the bench; rubbish moving in the wind, being picked up by different people and dropped by others; objects are left, forgotten, remembered and retrieved. The potential to understand and respond to the desires of occupants, at different scales, is an area of investigation that is, so far, under explored.

In the meantime, the immobilising tendencies of architectural drawings are implicated in the gap between Lefebvre’s representations of space and mobile practices (Robertson 2007). So we are interested in exploring methods that allow us, as designers and social researchers, to ‘unwrap the bundle’ (Lefebvre 2004, 19). Lefebvre sets up the beginnings of a list of categories, or concepts, that may be examined in an analysis: ‘Repetition and difference; mechanical and organic; discovery and creation; cyclical and linear; continuous and discontinuous; quantitative and qualitative...’ (Ibid.). These may be the starting points for drawing a rhythm analysis of New Road as an experiment as ‘...the ways we capture and represent mobilities are reflections of how we comprehend and understand the phenomenon of mobility at a very profound level’ (Jensen 2014, 27).

## Researching designed street space through drawing: Brighton's 'New Road'.

In order to illustrate the potential of drawing to 'capture' and interrogate the complex relationship between the design and the mobile practices of street space we now turn explicitly to research focussing upon New Road in Brighton, United Kingdom. The 'shared space' scheme in New Road was designed to re-imagine the relationships between walkers, cyclists, car users and others in mobile space. Benches are a key design feature of streets made for liveability and New Road is no exception. Consequently a key component of our methodology was a 24-hour 'bench study'.

<FIGURE 14.1> (Photograph of the bench in New Road)

Whilst Jensen (2014) discusses a range of representations of mobilities, these refer predominantly to singular modes of mobility – to singular rhythms. In contrast the challenge in this research was to use drawing to explore the myriad and situated rhythms of the New Road street space. Whilst architectural drawings are generally static representations of buildings in space and have been critiqued for their limitations in allowing for movements and fluidity, we argue that the slow process of drawing can facilitate the analysis of mobile practices at a more measured pace in order to make emotional engagements visible. We seek to exploit the slowness, or slowed-downness, of 'shared space' to look at moments through drawing and at the same time attend to the detail of the context in which the moment to moment micro mobilities take place as a street narrative.

As we have indicated above, our reflections upon intersections of multiple mobilities draws upon Lefebvre's (1991, 2004) theories of social space to consider the representations of space, which may be emblematic of, for example, particular power relations; the spatial practices, which are the mundanely or routinely experienced aspects of space; and representational spaces, which are the imagined aspects of space that offer potential for appropriation. We consider the shared space of New Road in Brighton as material form and space (Merriman 2006) and as a site of experience and

cultural image (Cosgrove and Daniels 1988). Space is regarded as a ‘medium’ not a ‘container’, such that space and action are inseparable (Tilley 1994).

Traditionally, transport planning has been concerned with maintaining networks of flow, and urban architecture has often stopped at the kerb. Similarly, studies on urban street spaces have tended to focus on their sustainability in terms of different modes of transport (DfT 2009). However, there has been less emphasis given to the potential of designed spaces in producing knowledge on their intricate social relations. The speediness of everyday life evident in most urban streets prohibits a close examination of these relationships. However, the approach of ‘shared space’, in which physical divisions between users are removed, allows for the slowing down and freezing of urban movement. Through the reconfiguration of the material space is a ‘re-staging’ (from ‘staging’ in Jensen 2013) for the re-negotiation of mobilities. Hans Monderman, the designer most closely associated with the idea of shared space, proposed such a re-compositioning of street space in a way that gave responsibility to individual users to negotiate their use of the space with other users. In the case of New Road in Brighton drivers, cyclists and others who move at different speeds through the space are negotiating their speed, direction and dwelling in the street with those who are spending more time there, whether sitting or playing, drinking, dancing or performing music. It is this intersection of the materiality of space and its social and cultural mobile practices that makes designed street spaces of particular interest to critical mobilities studies.

The bench central to our study is timber-clad and under-lit at night, is a relatively comfortable resting place and is, materially, without any of the defensive architectural features used to prevent homeless people using it for sleeping, which are becoming commonplace on many ‘public’ benches (Omidi 2014). Nevertheless, the bench is, of course, more than its materiality and is imbued with cultural meaning as well as governed according to its socio-political context. The New Road bench is itself the product of mobility. The street benches are an integral part of an overall design by

Copenhagen-based Gehl Architects and the benches themselves were designed and manufactured by Lancashire-based company: Woodscape. It is likely that the hardwood and metal fixtures themselves travelled from further afield. These originating qualities of the bench can be traced and become part of its on-going narrative. As the hardwood weathers and transforms, it follows its own trajectory, whilst it becomes part of the narrative of those who sit, lie, walk, run, climb and skateboard on it.

The fluctuating significance of the materialities of the bench is also implicated in the spatial practices of the street. The bench in New Road clearly had a story to tell, so we watched it over a 24-hour period in June 2014. Our ethnographic study comprised a mix of design and mobile methods (Büscher et al. 2011, Fincham et al. 2010). We observed the bench and recorded activity, on and around it, at regular intervals using field notes, video, photography *and drawings*. We also carried out mobile interviews with people using the bench. Although the methodological approach here appears to give prominence to visual methods, this does not mean that we are privileging this sense over others but approaches it with the understanding that all the senses are interconnected and that the visual reveals other sensory engagements with space (Pink 2009; Rose 2014).

<FIGURE 14.2 HERE. (*Sketches of New Road bench during 24-hour study*)

Hence, our focus is firstly on *capturing* this multisensory experience through drawing. Figure 14.2 is a selection of sketches made during the 24-hour study. The drawings of people sitting, talking, drinking and moving are tracings of the mobile practices around the bench, which have an ephemeral quality. They are textured in a way that implies movement and interaction. Without seeing faces we can gauge mood through body shape and posture. This meticulous yet undetailed stage of the process is the first step of any design investigation, paying very careful attention to all the occupants, human and non-human, of the space under consideration.

If we look at some of the drawings made over the 24-hour Bench Study (Figure 14.3) we can identify some of the rhythms that Lefebvre (2004) discusses. The ‘measure’ of the constituents of rhythms may be identified in drawings, such as the time that the plans and sketches were made – sometimes shown, sometimes not.

<FIGURE 14.3 HERE> *Plan drawings of movements in New Road*

The base drawing shows the benches, the trees, the colonnade and other ‘static’ elements. But of these elements even the very surface of the colonnade, for example, will change over time: accumulating very fine layers of dirt; becoming damaged in the form of scratches and chips; appearing to change shape and tone as the light conditions change and so on. We can identify ‘polyrhythmia’ where the concurrent and simultaneous rhythms of the bench are linked to its materiality and meanings along with the ‘natural’ rhythms of each occupant whose bodies may be considered as terms of reference: the bench is something to sit or sleep on. It is also a refuge and ‘a dirty old thing that attracts noise and trouble’. The dominant or ‘staging’ rhythms also change, for example, the police presence in the morning to check on the space’s homeless people pervades the space. However, what becomes apparent, particularly in the evening is that the usual dominant modal rhythms of the street become, in this space, less relevant as the rhythms of automobility are dampened by the volume of people during the day and in direct conflict with pedestrians at night when young people appropriate the space. We also identified the ‘arrythmia’ (‘abnormal’), for example, a man making and selling origami and an older couple permeating the festivities at night. These practices stand out in contrast with more pervasive rhythms of the street.

The drawings were created to encourage a ‘drawing in’ by asking the eyes to rove over, demanding a reading and a de-coding through imaginative interpretation and a ‘drawing together’ of relationships between representations that suggest the particular kinds of reality that are then constructed. Composite images were made, overlaying drawings with other images in order to

illuminate visible and invisible measures. For example, the constant grid of Lefebvre's (1991) 'spaces of representation' is provided by an Ordnance Survey map, with all the connotations of place and time according to geographical longitude and latitude that are universally imposed. Other elements are included that talk about relationships in the shared space, suggesting something more poetic than the straightforward and consistently plan views that (modernist) planners work with. We begin to appreciate the complexity of the space and the myriad embodied and disembodied rhythms within it. We think of the bench as the provocation allowing the space to be variously occupied and situated as closely as possible for minimal additional intervention – a haven in an otherwise hostile milieu.

The temporal rhythms we seek to explore have different ranges. At one level we have worked with cartographic juxtapositions of older Ordnance Survey maps (e.g. the 1974 OS map which predates the New Road redesign) and a relatively up to date digital map (Digimap), in order to reveal the changing structure of the street through time. Daily rhythms of the street and the bench are configured in different ways: Figure 14.4 depicts a drawing which developed from a selective set of conditions in relation to time and place. The weather and time are described through the depth, length and direction of shadows shown at intervals. Traces of occupations are shown indicating their mobilities alongside the relative speeds of bicycles and cars passing through; these are shown at the scale of the street and also at the micro scale of one part of the bench.

<FIGURE 14.4> *Drawing the space and time of the bench*

From here, following Appleyard Lynch and Meyer (1964), and in appreciating the temporal element of the space, we can develop more abstract representations of the interactions of space, time and mobilities. Returning to the fieldwork data, the observational notes and interviews carried out over the 24-hour study, we began to think about how the intersecting rhythms of the street could be represented according to Lefebvre's triptych of space. We took inspiration from Alison Turnbull's

drawings, which are drawn directly onto graph paper (Ref?). We began with a 'graph' plotting the rhythms of the bench over the 24-hour period. Vertical graph lines represented linear time in hourly intervals, starting at the beginning of the survey period (07:00) on the left hand side of the page. The horizontal undulating lines, representing, from the top downwards: volume of street users; generation, gender, passing through; automobility; and sitting, illustrate the ways in which the street is practiced as well as the mobile norms that produce these practices, for example the gendered norms produced through the gendering of mobile spaces (see for example Priya Uteng and Cresswell 2008).

So we used both the paper and the traces made on it to represent the tripartite rhythms of the street: the representations of space, the dominant authoritative rhythms of the street are imagined in the grid lines, the spatial practices in the linearity of the penciled lines and the representational spaces in the potential of the irregular pencil marks. The drawing suggested that there are specific relationships between sets of rhythms and that we can see how the manipulation of any of the spatial and temporal elements captured will affect other elements. The closer we get to the detail of the rhythms of these mobilities, the choreography of interactions becomes clearer and more open to analysis.

A final stage of work consisted of a drawing that combined both the hand-drawn rhythms of the bench and the graphic plotting of temporal rhythms through the 24-hour research period. Figure 14.5 is both a 'map' and a 'day in the life of' the street bench. But this is only the beginning of the interrogation of the space. The drawings provide new 'ways of seeing' that bring together selected assemblages of actors and mobilities that are open to interpretation as images. We see the ways in which different rhythms are not only present in the space but are the space.

<FIGURE 14.4> *Intersecting spatial and temporal rhythms*

## Conclusion

Drawings are speculative in ways that are aimed to provoke thought about how the spaces have been made and how the elements that have been designed may operate in practice. They reveal aspects of the space that may otherwise go unnoticed and thereby can provide a discrete contribution to the emerging field of mobilities design. In particular a focus on drawing foregrounds an aspect of design that is insufficiently incorporated within other aspects of architectural and urban design, although architects such as Tschumi (1978, 1981) have discussed these ideas previously and even developed designs in response. Appleyard, Lynch and Meyer's (1964) work in drawing the road also offers much in relation to the experience of mobile space and is yet undervalued.

Further, however, one of the more revelatory aspects of drawing is that it offers potential to invigorate or reinvigorate ethnographic research. Drawing was one aspect of a transdisciplinary study of a mobile space, which set out to uncover aspects of this space and specifically the negotiation of urban encounters. Scrutinized in relation to the alternative ways that were used to capture the space over the 24-hour period, they become part of a mosaic that offers a rich and insightful overview of the space, from varying angles. It is through this bringing together of research tools that it becomes possible to conceptualise the interactions between the political, material and embodied aspects of the space. In recognizing the creative role of measuring in design, thinking about the production and construction of mobile spaces may lead to more intentionally created urban landscapes of mobilities.

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<sup>1</sup> see M. Garcia, ed. *The Diagrams of Architecture*, (Chichester: Jon Wiley & Sons Ltd, 2010) p. 22 for a list of possible interpretations of the diagram in the fields of spatial design alone.