

## PUBLISHED VERSION

Jennifer Bonham, Carol Bacchi and Thomas Wanner

### **Gender and cycling: Gendering cycling subjects and forming bikes, practices and spaces as gendered objects**

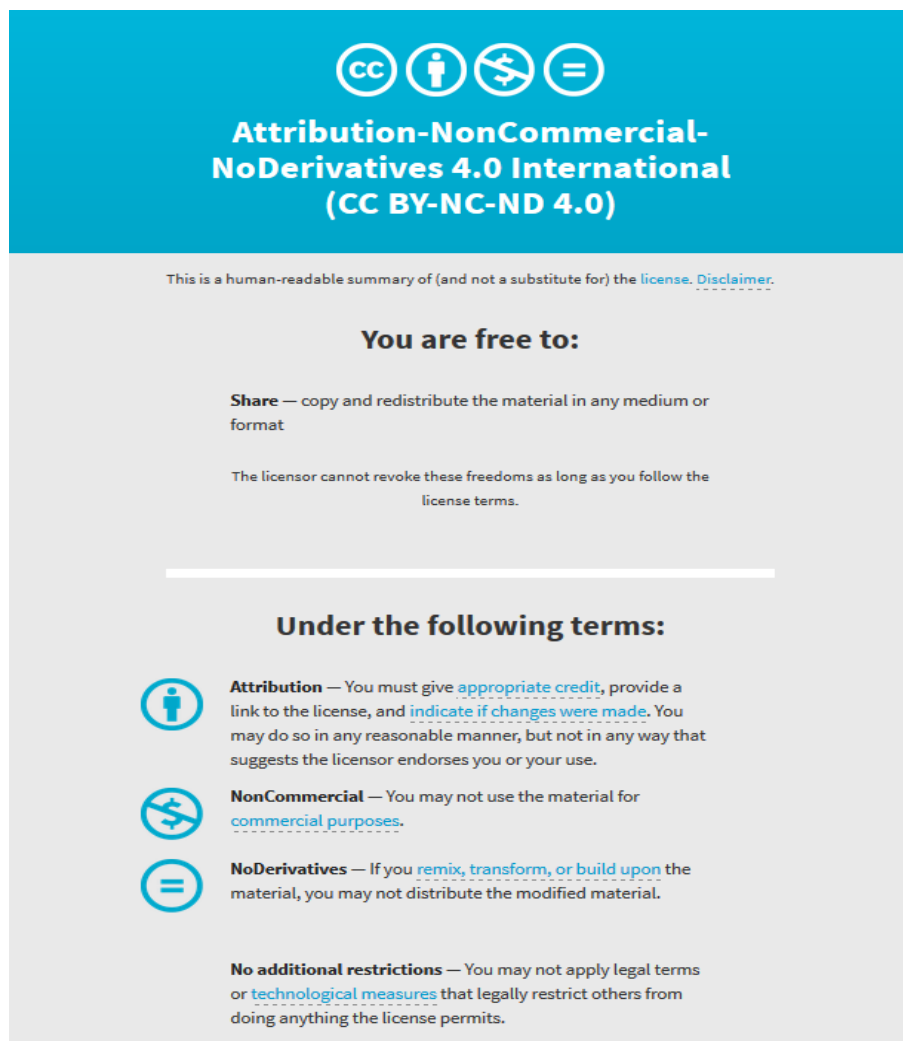
Cycling Futures, 2015 / Bonham, J., Johnson, M. (ed./s), Ch.9, pp.179-201

© 2015 The authors. This work is licenced under the Creative Commons Attribution-NonCommercial- NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA. This licence allows for the copying, distribution, display and performance of this work for non-commercial purposes providing the work is clearly attributed to the copyright holders. Address all inquiries to the Director at the above address.

Published version <http://dx.doi.org/10.20851/cycling-futures-09>

### PERMISSIONS

<http://creativecommons.org/licenses/by-nc-nd/4.0/>



The image shows a Creative Commons license summary for Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0). It features a blue header with the license name and icons for CC, a person, a crossed-out dollar sign, and an equals sign. Below the header, it states: "This is a human-readable summary of (and not a substitute for) the [license](#). [Disclaimer](#)." The main content is divided into two sections: "You are free to:" and "Under the following terms:". Under "You are free to:", it lists "Share" (copy and redistribute) and notes that the licensor cannot revoke these freedoms. Under "Under the following terms:", it lists "Attribution" (give credit and link to license), "NonCommercial" (no commercial use), "NoDerivatives" (no remixing or building upon), and "No additional restrictions" (no legal or technological measures).

**Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)**

This is a human-readable summary of (and not a substitute for) the [license](#). [Disclaimer](#).

**You are free to:**

**Share** — copy and redistribute the material in any medium or format

The licensor cannot revoke these freedoms as long as you follow the [license terms](#).

---

**Under the following terms:**

**Attribution** — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

**NonCommercial** — You may not use the material for [commercial purposes](#).

**NoDerivatives** — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

**No additional restrictions** — You may not apply legal terms or [technological measures](#) that legally restrict others from doing anything the license permits.

26 September 2017

<http://hdl.handle.net/2440/108067>

# 9 Gender and cycling: Gendering cycling subjects and *forming* bikes, practices and spaces as gendered objects

Jennifer Bonham, Carol Bacchi and Thomas Wanner

## Introduction

The landmark decision by the New South Wales Court of Appeal in the case of *Norrie v NSW*<sup>1</sup> to recognise the right of Norrie to register as sex ‘non-specific’ on a birth certificate serves as a caution to researchers, policy makers, planners — in fact the entire community — to remain sceptical of sex as an essential biological fact, and of gender as the culturally produced meanings which proceed from that fact. Both biological sex and gender are social productions (Gatens, 1983; Butler, 1990). Differentiating bodies by reference to anatomical (hormonal, physiological) features is not a self-evident or necessary way of ordering existence. As Bacchi notes:

if indeed ‘boys’ were boys and ‘girls’ were girls, there would not be the amount of disquiet generated by attempts to challenge gender-specific hairstyling (long hair for boys and short hair for girls), or attempts to challenge dress codes. (1996, p. 4)

---

<sup>1</sup> *Registrar of Births, Deaths and Marriages* [2013] NSWCA 145.

‘Women’ and ‘men’ are political, rather than natural, categories which have significant consequences for those who do not fit such categories (Bacchi, 1996, p. 4).

So what does this have to do with cycling? It provides an important opportunity to question assumptions about the relation between gender categories and cycling. This questioning has two aspects. First, thinking about ‘women’ and ‘men’ as socially produced categories allows us to challenge the content of those categories and, more importantly, explore the processes by which they are formed. In this chapter we have used the term ‘gendering’ to refer to these processes of gender formation. As Bacchi puts it:

[g]endering describes an ongoing and always incomplete process that *constitutes* (makes come into existence) (Jones, 1997, p. 265) ‘women’ and ‘men’ as specific kinds of unequal political subjects. (2012, p. 1, emphasis in the original)

The second aspect of this questioning concerns the formation of some ‘entity’ — in this instance, cycling (bikes, practices, spaces) by reference to ‘attributes’ differentiated as belonging to ‘woman’ or ‘man’ (Bacchi, 2012, p. 5). For example, cycling jerseys are formed as women’s or men’s jerseys by reference to physical ‘attributes’ differentiated as belonging to ‘women’ and ‘men’. As particular associations stick, such as women’s jerseys and men’s jerseys, they operate to reinforce the categories of ‘woman’ and ‘man’ (see also Faulkner, 2001, pp. 82-84). We refer to the second aspect of our inquiry as the ‘formation of gendered objects’ or ‘gendered formations’.

Our particular interest in this chapter is in the way in which gender is brought into the *ongoing-formation* of bikes, practices and spaces. The type of questioning we pursue interrogates these formations as it foregrounds the instability of ‘gender’ and the ongoing possibilities for change. This chapter uses interviews conducted for a research project on ‘Women returning to cycling’ to examine how researchers and the researched participate in both gendering — that is, constituting ‘women’ and ‘men’ — and forming bikes, bicycling practices and cycling spaces as gendered ‘objects’. Further, we are interested in how researchers and the researched unsettle gendering and gendered formations to produce alternative lives. The first section of the chapter explains the theoretical underpinnings of our analysis before elaborating our analytic approach. The final section reports on our analysis of gendering, the formation of gendered objects, and the unsettling of each of these processes.

## Theoretical underpinnings

In line with recent theoretical developments across the humanities and social sciences, we suggest that the things we often presume to be fixed and durable — objects such as bicycles, traffic lights, roads and pedal actions; and subjects such as cyclists, motorists, women, men — are in a continual process of becoming (Bardon & Josserand, 2010). In other words, as Bonham and Bacchi (2013) put it, they are in *ongoing-formation*. This point is important, as it draws attention both to how ‘things’ continue to be formed in taken-for-granted ways and to the ever-present possibilities for transformation. It also forces us to consider how individuals are located in these processes. Our interview analysis is informed by three key theoretical propositions outlined below.

We use Michel Foucault’s (1972) concept of *discursive practice* as a starting point to understand the *ongoing-formation* of objects and subjects of ‘cycling’. In its simplest terms, a discursive practice<sup>2</sup> can be understood as a historically specific set of routines through which social knowledges are continually formed (Bacchi & Bonham, 2014). This set of routines produces sites dispersed throughout society. For example, departments of transport, parliamentary select committees, households in which household travel surveys are implemented, university planning and engineering schools, local government traffic departments, transport consultants, planning and transport journals, motor accident commissions and insurers, and motor vehicle, cycling, public transport and pedestrian lobby groups are sites formed through spatio-temporal routines. It is in these sites and through the routines which form them that transport knowledges with varying degrees of authority are produced. These sites are also connected through routines — such as the state department of transport sending licence or vehicle registration forms to individual householders on an annual basis; or federal, state and local

---

<sup>2</sup> It is important to note that discursive practice does not refer to the use of language or logical propositions; rather, it refers to knowledge making. For a detailed explanation of the concept of discursive practice, see Bacchi and Bonham (2014). We use the term *discursive practice* interchangeably with Foucault’s recently popularised term *dispositif*, which he defines (1980, p. 194) as ‘... a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions — in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements’.

## Strategies for change

governments conducting traffic counts on the road network; or hospitals, police departments and insurers creating statistics on road crashes and disseminating these to parliamentary select committees and departments of transport (see Figure 9.1).

It is through these routine relations involving materials, movements, documents, words, symbols and so forth that objects (bicycles, trips), subjects (cyclists, travellers), concepts (derived demand, transport) and strategies (interactions between agencies, procedures for creating policy documents) are formed, re-formed and transformed (see also Schwanen, 2013). Interviews — whether conducted under the auspices of a government department or research institution — are also part of these routines of relations, so that researchers and the researched participate in the formation, re-formation and transformation of objects, subjects, concepts and strategies (Bonham & Bacchi, 2013). In this chapter, we are concerned with gendering — the production of categories of boy/

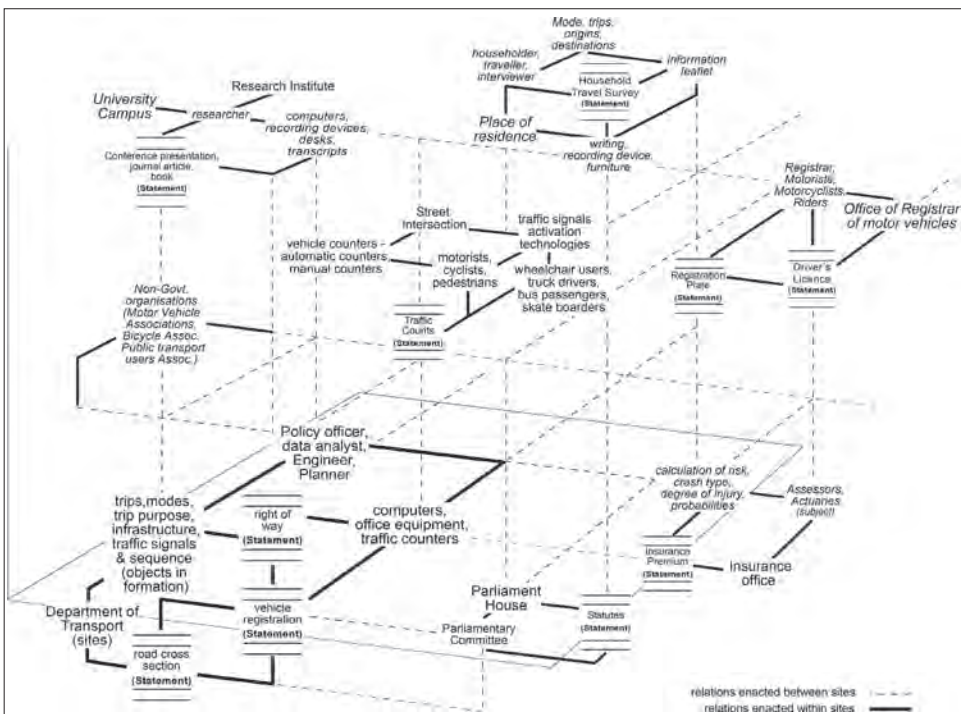


Figure 9.1: Discursive practice of transport.  
(Source: Diagram created by Chris Crothers for the authors.)

man/masculine and girl/woman/feminine — and the formation of bikes, cycling practices and cycling spaces as gendered objects (that is, gendered formations).

Our second theoretical point relates to the individuals who participate in interviews. The ontological status (Mol, 1999) of the ‘individual’ is rarely interrogated within transport or cycling literatures (Bonham & Cox, 2010). Rather the ‘individual’ is widely accepted as a self-evident, pre-discursive<sup>3</sup> fact (Butler, 1990, pp. 20-21). The ‘individual’ of liberal thought is at the centre of transport and cycling literatures. This ‘individual’ is assumed to be a coherent being that possesses an array of characteristics and capabilities, such as autonomy and rationality, in common with other human beings. This ‘individual’ is also assumed to be a ‘unique’ being with an interiority (subjectivity) which shapes her/his particular perceptions, desires and preferences (for example, Murtagh, Gatersleben, & Uzzell, 2012).<sup>4</sup>

We take a very different view of the individual and suggest that the very possibility of thinking ourselves as individuals, and particular kinds of individuals at that (Heyes, 2007, pp. 16-17), is an outcome of power/knowledge relations (discursive practices or *dispositifs*). As Miller and Rose put it, the ‘idea of the human subject as individuated, choosing, with capacities of self-reflection and a striving for autonomy, is a result of practices of subjectification’ (2008, p. 8).

The *interiority*, which is assumed to be a pre-social, self-evident fact, is an effect (Markula & Pringle, 2006, pp. 38-39)<sup>5</sup> of the ‘individual’ being located within, and required to respond to, a multiplicity of discursive practices. For example, before we are born we are located in discursive practices of biology (classification of species), obstetrics and midwifery. At birth we are located within

---

<sup>3</sup> By *pre-discursive*, we mean that the ‘individual’ is considered to exist prior to the social practices of ordering existence. We are not denying the materiality of the ‘individual’; we are saying simply that its separation from the mass of existence (everything contained in the world) is not a necessary way of ordering life.

<sup>4</sup> Within transport and cycling literatures, this interiority (subjectivity) is assumed to pre-exist society. For example, Murtagh et al. explain the imperfect internalisation of social roles as the result of personal or subjective interpretations of those roles (2012, p. 515).

<sup>5</sup> As Markula and Pringle argue, the individual’s ‘incessant engagement in self-interpretation’ locks the individual into particular subject positions (woman, man, cyclist, motorist), and thoroughly naturalises both that subject position and the effect of interiority produced through ‘self-interpretation’ (2010, p. 39).

discursive practices of kinship and citizenship. Our attendance at the health clinic locates us in discursive practices of epidemiology, medicine and paediatrics, while our attendance at school locates us in discursive practices of education. Targeted within multiple (and ever-multiplying) discursive practices, we are worked upon, and we work upon ourselves, to respond — to move, to speak, to think, to feel — in relation to those discursive practices. It follows that it is not a ‘natural’ woman or man that participates in the research interview; it is an individual which is itself the product of discipline (Heyes, 2007, p. 17). Further, when this interviewee speaks s/he says what it is *possible* to say within the given cultural context.<sup>6</sup>

This insight leads to our third theoretical point, which directly addresses the use of the term ‘gender’ to refer to particular processes (gendering and the formation of gendered objects). Similar to the ‘individual’, the term ‘gender’ is frequently deployed, but rarely interrogated within transport and cycling literatures (notable exceptions include Hanson & Pratt, 1995; Law, 1999; Hanson, 2010). ‘Gender’ is generally discussed as one of a number of characteristics that ‘individuals’ possess (for example, Sigurdardottir, Kaplan, Møller, & Teasdale, 2013; Spencer, Watts, Vivanco, & Flynn, 2013); and it is used by researchers in creating<sup>7</sup> and explaining ‘patterns’ in attitudes, behaviours and perceptions.<sup>8</sup> ‘Gender patterns’ of mobility have been explained as the outcome of either ‘natural’ differences between ‘men’ and ‘women’ (for example, risk aversion reported on by Pucher, Garrard, and Greaves, 2011) or the socialisation of ‘sexed’ bodies into prevailing gender roles (Emond, Tang, & Handy, 2009). More often, it seems, ‘gender patterns’ in attitudes, behaviours and perceptions remain a mysterious combination of both ‘naturally’ endowed and ‘culturally’ inculcated characteristics. On the one hand, the naturalisation of gender operates to ‘fix’ women and men in their biology, leaving us to wonder about the many people who do not neatly fit into the categories available. On the other hand, the socialisation thesis implies a culturally constituted set of attributes which can be taken up or shed more or less

---

<sup>6</sup> We do not wish to deny or diminish the attachment of the individual to what they think, feel or do.

<sup>7</sup> We use the term ‘create’, as the researcher actively engages in differentiating populations into gender categories.

<sup>8</sup> The concepts of ‘attitude’, ‘behaviour’ and ‘perception’ assume that the individual has an interiority which processes and produces true meanings of the world.

at will (Eveline, 2005, p. 642). Combining these two positions returns us to the intellectual dead end of the 'nature/nurture' debates.

A handful of researchers use a performative approach to gender in their analysis of the relationship between gender and mobility. Drawing on Pierre Bourdieu, for example, Cresswell and Uteng (2008), and Steinbach, Green, Datta, and Edwards (2011), offer important insights. They argue that mobility practices<sup>9</sup> become gendered as specific movements are cultivated by the individual in reference to her/his gender identity, and in turn these practices become a marker of that gender identity. This gender identity is socially produced. Steinbach et al. (2011) locate individuals within social contexts as they examine the culturally specific demands on 'women' and 'men' to conduct their mobility practices (such as cycling) in particular ways. These authors foreground the fluidity of cycling practices in London today and imply that this fluidity will ultimately congeal into specific feminine and masculine performances of cycling, as it has for other mobility practices like catching public transport or walking (Steinbach et al., 2011, p. 1125). However, we are concerned that Steinbach et al. (2011, p. 1125) retain the pre-discursive individual as they focus on the (constrained) *choices* their interviewees make in conforming to or resisting culturally acceptable practices of femininity and masculinity. Further, although practices are inherently unstable, there is no examination of how gendered mobility practices are transformed — for example, the various shifts in the United Kingdom from cycling being acceptable-unacceptable-acceptable for 'women' (Oddy, 2007; Cox, 2014).

Finally, Steinbach et al. (2011) participate both in gendering 'women' and 'men' and in the formation of gendered objects of cycling, such as clothing. It is the researchers, for instance, who create a typology of femininities as they classify some interviewee responses according to 'orthodox' or 'marginal' femininities. And it is the researchers, as much as the researched, who participate in forming cycling 'objects' — wearing particular clothes, thinking about cycling in terms of autonomy and freedom — as 'gendered objects'. For example, Steinbach et al. describe 'jeans and trainers and a jumper' as adherence to a more 'orthodox feminine aesthetic' (2011, p. 1025). Steinbach et al. do not reflect on their own gendering practices or on the processes of forming gendered cycling objects.

---

<sup>9</sup> Mobility practices range from long-distance travel to fine body movements such as hand-eye co-ordination.



Letherby and Reynolds (2009) also examine journeys and emotions with reference to Judith Butler's theorisation of gender as performative. Butler (1990) elaborates on the work of Michel Foucault (1978) as she argues that sexuality — and specifically, the normalisation of heterosexuality — is at the heart of the differentiation and regulation of 'woman' and 'man'. The subject positions 'woman' and 'man' are constituted in the process of excising and assembling 'attributes' according to a heterosexual norm. In turn, these 'attributes' — physical characteristics, ways of feeling, thinking and doing — operate to *regulate* those who are categorised as 'woman' and 'man'.<sup>10</sup> In Western contexts, where mobility is constituted and valued in different ways (for example, 'expeditions' and 'transport' are valued over 'nomadism' and 'wandering'), greater mobility is linked to masculinity, while reduced mobility is linked to femininity.<sup>11</sup> We are interested in *how* such links are made — that is, in the process through which 'man' is constituted as more mobile and 'woman' as less mobile. With Butler, we understand gender as a continual process; hence we use the verb form 'gendering' to describe 'the active shaping of the categories of "woman" and "man"' (Bacchi, 2012, p. 5) or the 'active doing of differentiation' (Bacchi, 2012, p. 9). In this approach, we interrogate how researchers *and* the researched participate in this differentiation.

Gendering occurs within a multiplicity of discursive practices. We suggest that the formation and 'taking up'<sup>12</sup> of subject positions such as 'woman' or 'man' does not have an end point. Rather, these — like all — subject positions are, as

---

<sup>10</sup> We are not denying the materiality of 'bodies'; rather, we are arguing, along with Butler, that bodies are not ontologically prior to gendering. Instead, gendering occurs within the same processes (that is, within the same discursive practices) which differentiate 'bodies' from the mass of existence (see also Subramanian, 2008, p. 39).

<sup>11</sup> This position contrasts markedly with mobility researchers such as Mimi Sheller. Drawing on Pierre Bourdieu, Sheller argues that 'the male body is culturally performed as a more mobile body, while the female body becomes more restricted and spatially circumscribed' (Sheller, 2008, p. 259). Although Sheller draws on Iris Marion Young's concept of performance (as cited in Sheller, 2008, p. 259), she also uses the categories of 'men' and 'women' as if they are unproblematic. For example, she repeats the oft-stated view that 'largely male experts and technicians ... may overlook women's experiences, perspectives and needs' (p. 258) as if these 'experiences, perspectives and needs' simply exist, rather than being constituted through gendering practices (including, within the discursive practice of transport).

<sup>12</sup> 'Taking up' does not refer to individuals choosing to adopt a subject position; rather, it refers to them doing something (such as ticking 'female' or 'male' on a census form) which acknowledges them as either female or male.

Chris Weedon puts it, 'precarious, contradictory and in process, constantly being reconstituted in discourse each time we think or speak' (as cited in Jones, 1997, p. 263). At the birth of a child (or in the ultrasound unit), midwives, obstetricians and parents are already employing a discursive practice of anatomy as they compare, differentiate, locate and pronounce, 'It's a girl', or 'It's a boy'.<sup>13</sup> Parents and hospital staff are required to complete forms which attest to the birth of that 'girl' or 'boy' (and now, perhaps, simply 'infant'). This differentiation — made more durable in the naming — is a process of gendering, and it locates the infant within discursive practices of anatomy and demography.

At numerous times throughout life, the individual will be called upon to acknowledge the self as female or male — for example, when completing forms (censuses, household travel surveys), participating in a sport (male and female codes), auditioning for a theatrical performance, or attending a school (all girls, all boys, co-ed). Similarly, the interviews conducted for the 'Women returning to cycling' study required interviewees to acknowledge themselves as women while the interviewers oversaw this process, monitoring who could be included in the research project — not just any 'body' could pronounce itself or be pronounced as 'woman'. As with any research project that differentiates participants in terms of gender (exclusively interviewing women or men or differentiating their interviewees as man or woman), the 'Women returning to cycling' researchers participated in gendering. Our concern in doing this was to acknowledge women who practice cycling and to interrupt the tendency in some studies that explicitly link women to, and consequently risk normalising women as, 'not cycling'.

The second way of thinking about gender as a process refers to the 'formation of gendered objects'. This process refers to the linking of 'attributes' constituted as feminine or masculine to particular objects — such as the formation of 'women's' and 'men's' jerseys by reference to physical attributes constituted as feminine and masculine, referred to above. As these attributes 'stick' (that is, as they come into widespread usage) they operate to (re)form the categories 'women' and 'men' with

---

<sup>13</sup> Today, a number of other responses have been made possible. We might say: 'The dividing practice available does not acknowledge what it is'; or: 'An alternative dividing practice does not create gender categories'; or: 'It's a baby' (which in itself continues to produce the division between 'human' and 'non-human'). We have borrowed the term *dividing practice* from Foucault, who adopts the term when discussing the mechanisms used in contemporary Western societies to differentiate populations (1982, p. 208).

these attributes, and this has consequences for the everyday lives of those categorised as 'women' and 'men'. Bruno Latour (1991) argues that technologies are social relations made durable. We would like to borrow this argument to suggest that the formation of bikes, practices and spaces as 'feminine' or 'masculine' assists in making particular formations of 'women' and 'men' durable. However, as feminist technology theorist Wendy Faulkner points out, these formations are never straightforward or stable (2001, pp. 82-83). We demonstrate this point with reference to the 'Women returning to cycling' project as we examine how bikes, practices and spaces are in *ongoing-formation* and, consequently, always open to change.

The 'Women returning to cycling' research participants were required to reflect on their own thinking, feeling, characterising and doing in relation to 'cycling', and, in doing this, to acknowledge themselves as cycling subjects (or not), thereby binding themselves to the subject positions available. 'Cycling' is also an object in *ongoing-formation* within discursive practices of transport, sport, health and urban planning. It is not possible to say just 'anything' about cycling or to link any movement whatsoever to cycling, just as it is not possible to say 'anything' about 'women'. We can only say 'what it is culturally possible' to say about cycling and gender. However, because gendering and the formation of gendered objects of cycling are ongoing processes, it is possible to interrupt attributions of gender and cycling. In the process of forming categories such as 'woman' and 'man' or relating gender to particular bicycles or riding practices we simultaneously form, re-form and transform both gender and cycling.

We are not claiming that the interruption of gender in a single interview automatically leads to change, but we are interested in analysing interviews for the change they might enable. Further, we are concerned that how we analyse interviews and distribute our 'findings' has political implications. If we fail to reflect on our own gendering practices and assume, first, the pre-discursive existence of 'women' and 'men', and second, the possibility of identifying norms amongst these 'women' and 'men', then we participate in making particular formations durable. These formations have consequences for all people, but especially for those who live their lives outside the range of socially constituted norms. This chapter examines the processes of gendering and the formation of gendered objects in relation to 'cycling' in order to open up new possibilities for gender and cycling practice.

Methodology: Analysing interviews

The ‘Women returning to cycling’ study, conducted in 2009, used in-depth interviews to gather information about women’s engagement in cycling. Forty-nine women participated in the study. Women who had returned to cycling more than a year before the study were interviewed once, while those who had more recently returned to cycling were interviewed on two or more occasions, in order to track the process of becoming a ‘cyclist’. The interview transcripts were initially analysed using a conventional analytic technique — specifically, a thematic approach (Bonham & Wilson, 2012a; 2012b). However, we were concerned that this technique risked essentialising and normalising women who cycled as particular *kinds* of women (for example, sporty, ‘outdoors-ish’, tough, unconventional), thereby making cycling a difficult option for women in general. In addressing this issue, Bonham and Bacchi (2013) developed a new approach to analysing interviews, ‘poststructural interview analysis’, and used it to examine how cycling and cyclists were formed and transformed in the interview process. In this chapter, we report on the use of this analytic technique to examine the gendering of ‘women’ and ‘men’ and the formation of gendered objects of cycling.

Poststructural interview analysis focuses on ‘*what is said*’ in the interview process rather than on the people who say it (Stainton-Rogers & Stainton-Rogers, 1990). Following Bonham and Bacchi, we have analysed ‘*what is said*’ in the interview material by looking for moments of ‘excision and attribution’, ‘measurement’ and ‘self-formation’ (2013, pp. 15-16). Moments of ‘excision and attribution’ refer to points in the interview where particular ways of thinking, feeling, characterising and doing are differentiated from the mass of existence as an attribute of ‘women’ or ‘men’ and related to ‘cycling’. ‘Measurement’ refers to those moments where some form of quantification is used (such as ‘more’, ‘less’, ‘many’, ‘few’, ‘old’, ‘young’) in the process of relating ‘attributes’ of gender to cycling — that is, in the process of forming cycling as a gendered object. Finally, ‘self-formation’ refers to those moments when the interviewee self-genders — that is, when the interviewee speaks of the self in the subject position of ‘woman’, ‘girl’, ‘lady’ or ‘female’, thereby binding the self to that position.

Our analysis has been concerned with those instances in which specific ‘attributes’ are generalised to all men or all women. Partners, relatives and friends

were frequently gendered through the use of terms such as ‘husband’, ‘wife’, ‘fiancée’, ‘fiancé’, ‘girlfriend’, ‘boyfriend’, ‘aunt’, ‘uncle’ and so forth. However, we have confined our analysis to those moments when particular ‘attributes’ of that individual (‘husband’, ‘boyfriend’ and so on) were extrapolated to the category of ‘men’ or ‘women’ — thereby gendering ‘women’ and ‘men’. We raise questions about whether this is a pervasive formation; how it has become possible to relate a particular ‘attribute’ to a particular gender; and how the respondent unsettles or reaffirms that formation.

Drawing on Bonham and Bacchi (2013), we are interested in precisely *what* interviewees say and how this forms, re-forms or has the potential to transform what is possible in terms of women, men and cyclists. Where relevant, we have drawn on historical texts to demonstrate formations at different historical moments and to foreground sites and moments of transformation. We have ordered the discussion around the ‘objects’ of bikes, practices and spaces, and we consider both their gendered formation and their gendering effects. We are specifically interested in the discursive practices in which these objects are gendered, and whether the ‘Women returning to cycling’ interviews continue or disrupt, and propose alternatives to, pervasive gendered formations. It is important to tease out these interruptions and bring them into play, as they open possibilities for multiple cycling existences.

## Transforming bikes, practices and spaces

### *Transforming bicycles*

Bicycles are not quite the sturdy, stable objects we assume them to be. The taken-for-granted ‘materiality’ of the bicycle is in continual or *ongoing-formation*<sup>14</sup> within discursive practices of engineering, biomechanics, science, technology, transport, health and recreation. In the following section, we demonstrate the continual transformation of the bicycle as we contrast the gendered formation of the bicycle in the late nineteenth century with its gendered formation in the ‘Women returning to cycling’ interviews.

At various moments ‘Women returning to cycling’ interviewees spoke of the bicycles they owned as a ‘lady’s’, ‘man’s’, ‘girl’s’ or ‘boy’s’ bike. The gendered formation

---

<sup>14</sup> This includes forming in the same and in different ways.

of the bicycle has been apparent almost since the emergence of bicycle technologies themselves (Oddy, 1996; Mackintosh & Norcliffe, 2007). Designers and engineers have been especially engaged in this process, as they have integrated particular knowledges of women and men with knowledges of materials and mechanics. For example, in his 1890s treatise on *Bicycles and tricycles*, the British instructor in civil engineering Archibald Sharp generally spoke of the diamond frame bike in generic terms as a 'safety bike', 'safety' or 'bike'.<sup>15</sup> However, at particular points in his treatise he differentiates safety bikes according to the presence or absence of a top-tube, and it is at this point that he genders the safety bike. Bikes with top-tubes become a 'man's safety', while bikes without top-tubes become 'ladies' safeties' (1896, p. 287).<sup>16</sup> The 'ladies' safety' was recommended 'if the lady rider wears skirts' (p. 287). *What* Sharp says brings together discursive practices of engineering, design, clothing, class and gender. It also foregrounds the possibility that lady riders might *not* wear skirts. The 'rational clothing' debates of the day made it possible for the lady to wear knickerbockers (Bijker, 1995, p. 95; Furness, 2010, pp. 19-23), pantaloons or some variant of the 'bifurcated costume' used by women in France (Oddy, 1996, p. 64) and by lady racing cyclists (Simpson, 2007, pp. 59-60). If the 'ladies' safety' provided for ladies who wore skirts, it is possible to ask whether the 'safety' — a bike with a top-tube — catered for all other ladies as well as men. Differentiating safety bikes into the 'ladies' safety' and 'men's safety' — rather than into the 'safety with'/'safety without' a top-tube or the 'skirt-wearing ladies' safety'/'safety' — formed bicycles as gendered objects. Thus formed, the 'ladies' safety' operates to gender its user as 'woman' or 'lady'. The formation of the bicycle as a gendered object was taken up more than 100 years later — and no doubt at many points in between (Cox, 2014) — in the 'Women returning to cycling' study.

In the following exchange, both Interviewee One and the Interviewer participate in, and unsettle, the gendered formation of the 'ladies' bicycle'.

*Interviewee One:* Yes. I'm not mad about my bike because it's a male bike. It's a hybrid, whatever they call them, generic bike. It's got the bar across the top and I don't like that ... I would rather have one without the bar. It would be a lot easier.

---

<sup>15</sup> The 'safety bicycle' is the basic diamond frame design still used today.

<sup>16</sup> An alternative to the bike frame without a top-tube was a bike frame with two down tubes — one set above the other on a different angle (Sharp, 1896, p. 288).

*Interviewer:* Right, so a step-through?

*Interviewee One:* Yes, a step-through one.

*Interviewer:* Like the old [kind of] women's bikes that we used to have and then they took them away from us?

*Interviewee One:* Yes, and then they took them away. They all seem to be the same.<sup>17</sup>

'What is said' in this exchange is a moment of potential transformation. First, the 'male bike', 'generic bike' and 'hybrid' have been conflated, opening up an array of possibilities. But our interest at this point is the differentiation of the bikes according to the presence or absence of the top-tube — the 'one without the bar'. The Interviewer and Interviewee One agree that this bike is a 'step-through'. It is *not* a ladies' or a women's bike, but it is *like* the old 'women's bikes'. Speaking about bikes 'without the bar' as a 'step-through' de-genders this particular bike; and whether or not it continues to be de-gendered will depend on how this exchange is reported by the analyst, how bikes without top-tubes are spoken of in other forums and whether those who use such bikes go undifferentiated.<sup>18</sup> 'Taking them away' — presumably the withdrawal of bikes without top-tubes from the market by retailers — may have made the de-gendering of these bikes possible, as their reintroduction as 'step-throughs' forms them simply as variants of the 'bike'.

At the same time that the step-through is being re-formed as 'not' gender-specific, in other interviews bikes with top-tubes are in the process of being re-gendered. The following excerpts from Interviewees Two and Three demonstrate respondents binding themselves to the category 'woman', but they also demonstrate the differentiation and formation of bikes with top-tubes as gendered objects in new ways.

---

<sup>17</sup> The comment 'then they took them away from us' raises the possibility that women were either expected to ride (bikes in *formation* as) 'men's bikes' or that they were not to ride at all. This line of inquiry opens myriad questions about changing practices of cycling — from cycling mainly for everyday journeys to cycling mainly as a form of sport or exercise — through the second half of the twentieth century. 'Men's bikes' — which could be made lighter because of the additional strength afforded by the top-tube — were used for racing (Simpson, 2007, p. 60). If 'men's bikes' and 'sport cycling' — sport being linked to masculinity — became prevalent, then it is clear that 'women' would be considerably less likely to cycle.

<sup>18</sup> Peter Cox notes that some insurance companies use this differentiation in their insurance processes (2014, p. 1).

*Interviewee Two:* I was looking at a Giant originally but a female version.

*Interviewee Three:* Well, first of all it was really hard to find female road bikes.

The formation of the bikes as a gendered object shifts from the presence or absence of the top-tube to the specifications of a range of attributes not previously gendered. Interviewees Four and Five elaborate on these attributes.

*Interviewee Four:* I ended up with a women's specific bike, which I wasn't going to do because I don't [pause] — a bike's a bike, isn't it? But he explained the handlebars were narrower which probably suited me. I have problems with my shoulder because the other bike was too far forward. So I thought, 'Well, okay, maybe that's important'.

*Interviewee Five:* I got a SUBzero ... It's a women's range named after [pause] — the athlete has had a hand in designing it. So it's actually [pause] — yes, the women's range, which up until that point I was like, 'I don't need a women's range bicycle'. But then they explained it to me ... It had a compact chain ring rather than a triple chain ring ... It had blocks on the gear levers. So your hand can reach around the hoods ... Whereas on a man's bike [pause] they've got these *big fat* things. And [it has] *smaller* hoods, *closer* together. A women's specific seat. There was just all these things that I didn't think were relevant. But once I felt them, I was like that's amazing. (Emphasis added)

This re-formation of bikes (with top-tubes) is made possible as discursive practices of anatomy and physiology and biomechanics are distributed into sites of design, manufacture, retail, marketing and research interviews. In both excerpts, there is resistance to 'differentiation' — not fitting the bicycle norm. In the first excerpt, this resistance is overcome as a discursive practice of physiology — shoulder function — displaces the discursive practice of anatomy.<sup>19</sup> In the second excerpt, the interviewee compares the fit of a bike to her own body with that of a 'man's' body. In this comparison, she excises, forms and measures an attribute (reach) and binds herself to the subject position of 'woman' through a particular anatomical difference (hand size) from men. But this differentiation may not 'stick' (become widespread), as Interviewee Five says:

*Interviewee Five:* So there's some arguments over whether there is such a thing as a women's specific bike.

---

<sup>19</sup> Anatomical attributes are themselves in *ongoing-formation*.



This alternative possibility is invoked by Interviewee Six:

*Interviewee Six:* The only thing is, we changed to a female-designed seat — which my husband finds very comfortable as well.

The issue in discussing these excerpts is not to explain ‘why’ interviewees bind themselves to the category of ‘woman’ or not. Rather, it is to foreground the techniques involved in individuals positioning themselves as ‘women’ — or not — by reference to ‘attributes’ of bikes that are specified as ‘women’s bikes’. It is also to indicate the range of potential effects of this process in the *re-formation* of the materiality of bikes. It is possible to consider how the formation of bikes as gendered objects might differentially value bikes and bodies bound to femininity and masculinity. This gendered formation is itself gendering, as it shapes the categories of ‘woman’ and ‘man’ and makes it possible to call into question those individuals specified as ‘women’ and ‘men’ who do not conform to the norms made durable in gendered bikes and bike accessories.

## Forming practices

### *Risk*

The ‘Women returning to cycling’ interviews provide a site to examine the gendered formation of cycling practices. At various moments, specific ways of moving and manoeuvring were related to men or women. However, as responses from Interviewee Seven demonstrate, this attribution was always provisional, since other discursive practices could be deployed to challenge any certainties.

*Interviewee Seven:* My husband takes more risks and I get cross with him the way he encourages my son sometimes *just to pull out*. I’m fairly cautious.

I think women tend to be more cautious anyway ... (Emphasis added)

Interviewee Seven excises the sequence of movements involved in ‘*just to pull out*’ as a risky way of moving.<sup>20</sup> In this process Interviewee Seven genders herself as a woman by speaking of her own way of moving as ‘cautious’ and relating this caution to women in general. But in this instance, Interviewee Seven unsettles any straightforward formation of ‘risky ways of moving’ as masculine. Although

---

<sup>20</sup> Another chapter could be written on the mechanisms which have made it possible to speak of some ways of moving as ‘risky’ and others as ‘cautious’.

her partner 'takes more risks' and encourages her son to take more risks, 'what Interviewee Seven says' later in the interview calls into question the formation of risk taking as a gendered manoeuvre. Risk is potentially de- or re-gendered as Interviewee Seven relates cycling to driving.

*Interviewee Seven:* I'm wondering if the way you drive is the way you cycle. Various women say, 'I'm taking the female option. I'm not turning right here — I'm turning left and then right because it's a hard turn'. And my husband does the same thing; he'll take the 'risk turning' right. There is a difference between the way women and men drive. I don't know if the *alpha women* drive like the men but I think [pause] — I'm sure that's reflected in the way they cycle [pause]. (Emphasis added)

Interviewee Seven makes apparent the ever-finer differentiations within gender categories. 'Alpha women' are not normal women; rather, they are a subcategory of women who are more like men. But, again, any certainty is called into question when Interviewee Seven says:

*Interviewee Seven:* I am sure we have a [pause] — women [pause] — girls, we are a bit more reserved [pauses] — although as kids we did cycle around with no hands [pause] but I haven't had any major bike spills.

And later:

[Y]ou have to put yourself in some situations ... You have to keep pushing the edge a little. The same as when I was saying before about cycling home [pause] — you're still taking a calculated risk ... I'll try to counter that risk in some way but I'll still take that risk and acknowledge that it might be a very slight risk. If you don't do it then I think you lose something as well ... I think [pause] you need to be exposed [pause] —you need to keep exposing yourself too [pauses] otherwise you do become a bit closed.

Concepts of childhood development in *formation* in psychology and pedagogy — such as risk taking and learning-through-experience — interrupt any straightforward linking of 'risky manoeuvres' to men and 'cautious manoeuvres' to women. This interruption coalesces with concepts of 'use it or lose it' in *formation* in the health sciences and 'calculated risk' in *formation* across the health sciences and economics, to name but a few disciplines. These excerpts demonstrate the unstable process of relating particular cycling practices to 'women' and 'men'. They also force us to examine the political consequences of 'fixing' cycling practices as arising from attributes of 'women' and 'men'.

### *Speed and effort*

Describing her cycle journey to and from work, Interviewee Eight compares her body and bicycling practices to the bodies and practices of others, and in doing so she rejects the subject position of cyclist.

*Interviewee Eight:* When I ride home I feel like one of those middle-aged old women you know, kind of [pause] I don't go that slow but I don't race. I'm at the lights and there are these other young guys and off they go and I just puddle along. Well, I don't puddle along — I get a bit of a sweat up because you do it for exercise as well as a means of transport. But, you know, I don't go that fast. So that's why I don't really see myself as a cyclist.

In making the comparison, Interviewee Eight excises aspects of physical appearance and binds herself to 'middle-aged woman' in relation to 'young guys'. She also excises particular ways of moving and differentiates herself from 'cyclists' according to these ways of moving: 'off they go', 'I just puddle along', 'I don't go that fast'. Speed differentiates 'cyclist' from 'not cyclist', and in this differentiation there is a tentative formation of 'cyclists' as of a particular age and gender — 'young guys'.

However, the excerpt from Interviewee Eight is particularly instructive as she says, 'I get a bit of a sweat up'. A detailed examination of this excerpt is beyond the scope of this chapter, but it does foreground the association of certain amounts of physical exertion with 'women' and 'men'. Interviewee Eight forms herself as a middle-aged woman but one that gets a 'bit of a sweat up', as she cycles 'for exercise as well as a means of transport'. This excerpt allows us to explore the formation of 'exercise' and 'sport' as masculine and the suspicions this makes possible about women who participate in 'exercise' and 'sport' (and men who do not). Further, we could investigate how, in the Australian context, cycling has been assembled together with sport and masculinity, thereby making both 'cycling' (other than for sport) problematic and 'women-cycling' particularly suspect. We could also analyse whether *what* Interviewee Eight says operates to de-gender 'exercise' and the mechanisms that enable 'exercise' to be de-gendered — for example, through a discursive practice of public health.

### *Forming spaces*

At no point did interviewees gender spaces of cycling. They spoke of the spaces in which they cycled in terms of 'rights', 'stress', 'danger', 'concentration', 'relaxation'

and more. Several contrasted the spaces they used for cycling (on-road spaces, cycle paths, footpaths) with the spaces used by their partners, but they did not associate particular cycling spaces with gender. We suggest that the formation of cycling spaces as gendered spaces is taking place within academic literature as researchers employ gendering practices (scrutinising physical appearance) to differentiate cycling bodies and link particular bodies to particular spaces (for example, Garrard, Rose & Lo, 2008). One of the effects of this gendering is to link women to 'special' spaces — such as off-road cycle paths — which makes it possible to raise questions about the normality of women who do not use such spaces, as well as about the men who do use these spaces. It also leaves aside the more important issue that the public spaces of the road are not designed, constructed or regulated to meet the needs of all road users. Even if we narrow that need to movement<sup>21</sup>, the formation of Australian roads continues to foster a particular set of social relations — the convenience, speed and safety of some road users (particularly motor vehicle operators) over others. The formation of cycling spaces as gendered spaces does not advance the possibility of re-forming road spaces to secure the convenience, safety and comfort of a multiplicity of road users.<sup>22</sup>

### Conclusion

Through focusing on the *ongoing-formation* of bikes, practices and spaces it is possible to observe both the creation of gendered objects and the role they play in gendering 'women' and 'men'. Rather than taking objects as fixed, durable and internally coherent we have sought to demonstrate the processes through which they are continually formed — that is, the processes by which materials, words, movements, feelings and so forth are continually brought into relation as particular kinds of things.

In particular, our analysis has demonstrated how the interrelations between discursive practices operate to produce new objects (and subjects). For example, the discursive practices of engineering, clothing manufacture, class and anatomy

---

<sup>21</sup> Movement, that is, as opposed to the multiplicity of uses that a road has at different times and places — such as a political space, festive space, gathering space and so forth.

<sup>22</sup> For example, there is no allowance made for the re-formation of road spaces to meet the requirements of cyclists as well as other slow- and medium-paced travellers (those who use wheelchairs or devices to assist walking, skateboarders, roller-bladers and scooter riders).

(and also, perhaps, physiology and endocrinology) produced the 'ladies' safety' and the 'feminine' subject who should ride that bike. Despite the seemingly self-evident and fixed nature of the 'ladies' and 'men's' 'safety', the recent use of the term 'step-through' demonstrates the instability of these objects and points to their continual formation. By interrupting this formation it is possible to challenge the gendered formation of objects and to constitute 'women' and 'men' otherwise.

This study has implications for research, policy making and cycle planning. It brings to attention the contingency in taken-for-granted 'objects' such as bikes, cycleways, traffic and so forth. It also highlights the part played by researchers in gendering practices — for example, differentiating women and men in advertising and conducting interviews, or in counting cyclists using cycle paths and roads. We need to remain critical of these processes of differentiation and their political effects.

## References

- Bacchi, C. (1996). *The politics of affirmative action: 'Women', equality and category politics*. London: Sage.
- Bacchi, C. (2009). *Analysing policy: What's the problem represented to be? French's Forest*: Pearson.
- Bacchi, C. (2012, December 4-6). Policies as gendering practices: Moving past categorical distinctions. *Fay Gale Conference*, The University of Adelaide, Australia.
- Bacchi, C, & Bonham, J. (2014). Reclaiming discursive practices as an analytic focus: Political implications. *Foucault Studies*, 17, 179-192.
- Bardon, T, & Josserand, E. (2010). A Nietzschean reading of Foucauldian thinking: Constructing a project of the self within an ontology of becoming. *Organization*, 18(4), 497-515.
- Bijker, W. (1995). *Of bicycles, bakelite and bulbs: Toward a theory of sociotechnical change*. Cambridge, Mass: The MIT Press.
- Bonham, J, & Bacchi, C. (2013, January 6-7). Cycling subjectivities in on-going-formation: Interviews as political interventions. *Foucault and Mobilities Symposium*, University of Lucerne, Switzerland.
- Bonham, J, & Cox, P. (2010). The disruptive traveller: A Foucauldian analysis of cycleways. *Road & Transport Research*, 19(2), 43-54.

- Bonham, J, & Suh, J. (2008). Pedalling the city: Intra-urban differences in cycling for the journey-to-work. *Road and Transport Research*, 17(4), 25-40.
- Bonham, J, & Wilson, A. (2012a). Women cycling through the life course: An Australian case-study. In J Parkin (Ed.), *Cycling and sustainability* (pp. 59-82). Bingley: Emerald.
- Bonham, J, & Wilson, A. (2012b). Bicycling through the life course: The start-stop-start experiences of women cycling. *International Journal of Sustainable Transportation*, 6(4), 195-213.
- Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. New York, NY: Routledge.
- Cox, P. (Ed.). (2014). *Cycling cultures*. Chester: University of Chester Press.
- Cresswell, T, & Uteng, TP. (2008). Gendered mobilities: Towards an holistic understanding. In TP Uteng, & T Cresswell (Eds.), *Gendered mobilities* (pp. 1-12). Burlington, VT: Ashgate.
- Emond, C, Tang, W, & Handy, S. (2009). Explaining gender difference in bicycling behaviour. *Transportation Research Record*, 2125, 16-25.
- Eveline, J. (2005). Woman in the ivory tower: Gendering feminised and masculinised identities. *Journal of Organisational Change Management*, 18(6), 641-658.
- Faulkner, W. (2001). The technology question in feminism: A view from feminist technology studies. *Women's Studies International Forum*, 24(1), 79-95.
- Foucault, M. (1972). *The archaeology of knowledge*. London: Tavistock Publications Ltd.
- Foucault, M. (1978). *The history of sexuality*. London: Penguin.
- Foucault, M. (1980). The confession of the flesh. In C Gordon (Ed.), *Power/Knowledge: Selected interviews and other writings 1972-1977* (pp. 194-228). London: Harvester Press.
- Foucault, M. (1982). The subject and power. In H Dreyfus, & P Rabinow (Eds.), *Michel Foucault: Beyond structuralism and hermeneutics* (pp. 208-226). Hemel Hempstead: Harvester Wheatsheaf.
- Furness, Z. (2010). *One less car: Bicycling and the politics of automobility*. Philadelphia, PA: Temple University Press.
- Garrard, G, Rose, G, & Lo, SK. (2008). Promoting transport cycling for women: The role of bicycle infrastructure. *Preventive Medicine*, 46(1), 55-9.

- Gatens, M. (1983). A critique of the sex/gender distinction. In J Allen, & P Patton (Eds.), *Beyond Marxism: Interventions after Marx* (pp. 143-162). Leichardt: Intervention Publications.
- Hanson, S. (2010). Gender and mobility: New approaches for informing sustainability. *Gender, Place and Culture*, 17(1), 5-23.
- Hanson, S, & Pratt, G. (1995). *Gender, work and space*. London: Routledge.
- Heyes, C. (2007). *Self-Transformations: Foucault, ethics, and normalized bodies*. Oxford: Oxford University Press.
- Jones, A. (1997). Teaching post-structuralist feminist theory in education: Student resistances. *Gender and Education*, 9(3), 261-269.
- Latour, B. (1991). Technology is society made durable. In J Law (Ed.), *A sociology of monsters: Essay on power, technology and domination* (pp. 103-131). London: Routledge.
- Law, R. (1999). Beyond 'women and transport': Towards new geographies of gender and daily mobility. *Progress in Human Geography*, 23(4), 567-88.
- Letherby, G, & Reynolds, G. (2009). Emotion, gender, and travel: Moving On. In G Letherby, & G Reynolds (Eds.), *Gendered journeys, mobile emotions* (pp. 19-32). Farnham: Ashgate.
- Mackintosh, PG, & Norcliffe, G. (2007). Men, women and the bicycle: Gender and social geography of cycling in the late-nineteenth century. In D Horton, P Rosen, & P Cox (Eds.), *Cycling and society* (pp. 153-177). Aldershot: Ashgate.
- Markula, P, & Pringle, R. (2006). *Foucault, sport and exercise: Power, knowledge and transformation of the self*. Abingdon: Routledge.
- Miller, P, & Rose, N. (2008). *Governing the present: Administering economic, social and personal life*. Cambridge: Polity Press.
- Mol, A. (1999). Ontological politics: A word and some questions. In J Law, & J Hassard (Eds.), *Actor network theory and after* (pp. 74-89). Oxford: Blackwell Publishers.
- Murtagh, N, Gatersleben, B, & Uzzell, D. (2012). Multiple identities and travel mode choice for regular journeys. *Transportation Research Part F*, 15(5), 514-524.
- New South Wales Court of Appeal. (2013). *Norrie v NSW Registrar of Births, Deaths and Marriages* [2013] NSWCA 145. Sydney, Australia: Government of New South Wales. Retrieved 24 July 2015 from <https://>

- [www.caselaw.nsw.gov.au/decision/54a63a723004de94513dab59](http://www.caselaw.nsw.gov.au/decision/54a63a723004de94513dab59)  
<http://www.caselaw.nsw.gov.au/action/pjudg?jgmid=165088>.
- Oddy, N. (1996). Bicycles. In P Kirkham (Ed.), *The gendered object* (pp. 60-69). Manchester: Manchester University Press.
- Oddy, N. (2007). The flaneur on wheels? In D Horton, P Rosen, & P Cox (Eds.), *Cycling and society* (pp. 97-112). Aldershot: Ashgate.
- Pucher, J, Garrard, J, & Greaves, S. (2011). Cycling down under: A comparative analysis of bicycling trends and policies in Sydney and Melbourne. *Journal of Transport Geography*, 19(2), 332-345.
- Schwanen, T. (2013, January 6-7). Passenger transport as object of knowledge: Shifts in nature and implications for government. *Foucault and Mobilities Research Symposium*, Luzern, Switzerland.
- Sharp, A. (1896). *Bicycles and tricycles: A treatise on their design and construction*. London, UK: Longmans, Green and Co. Retrieved 11 June 2015  
<http://archive.org/stream/bicycles>.
- Sheller, M. (2008). Gendered mobilities: Epilogue. In TP Uteng, & T Cresswell (Eds.), *Gendered mobilities* (pp. 257-265). Burlington, VT: Ashgate.
- Sigurdardottir, S, Kaplan, S, Møller, M, & Teasdale, T. (2013). Understanding adolescents' intentions to commute by car or bicycle as adults. *Transportation Research Part D*, 24, 1-9.
- Simpson, C. (2007). Capitalising on curiosity: Women's professional cycle racing in the late nineteenth century. In D Horton, P Rosen, & P Cox (Eds.), *Cycling and society* (pp. 47-65). Aldershot: Ashgate.
- Spencer, P, Watts, R, Vivanco, L, & Flynn, B. (2013). The effect of environmental factors on bicycle commuters in Vermont: Influences of a northern climate. *Journal of Transport Geography*, 31, 11-17.
- Stainton-Rogers, R, & Stainton-Rogers, W. (1990). What the Brits got out of the Q: And why their work may not line up with the American way of getting into it! *The Electronic Journal of Communication*, 1(1). Retrieved 24 July 2015 from <http://www.cios.org/EJCPUBLIC/001/1/00113.html>.
- Steinbach, R, Green, J, Datta, J, & Edwards, P. (2011). Cycling and the city: A case study of how gendered, ethnic and class identities can shape healthy transport choices. *Social Science & Medicine*, 72(7), 1123-1130.
- Subramanian, S. (2008). Embodying the space between: Unmapping writing about racialised and gendered mobilities. In TP Uteng, & T Cresswell (Eds.), *Gendered mobilities* (pp. 35-45). Burlington, VT: Ashgate.