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An Investigation into the Social and Cultural Dynamics that Shape Product Service Systems Consumption

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An Investigation into the Social and Cultural Dynamics that Shape Product Service Systems Consumption

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Abstract

Improved resource efficiency and extended product life cycles are strategies prioritized by policy makers to achieve sustainable production and consumption. Literature suggests that Product Service Systems (PSS), *competitive systems of products, services, supporting networks and infrastructure designed to satisfy demand using fewer resources than traditional business models* can deliver these strategies. Whilst PSS' resource efficiency potential has been questioned, PSS may still help society move toward more sustainable futures. Indeed, PSS have been linked to the concept of circular economy in which resources are reused, recovered and regenerated to minimise environmental impact of consumption.

Yet PSS have not been widely taken up in consumer markets and consequently their potential to address sustainability challenges has not been realised. In response, this thesis investigates the social and cultural dynamics that shape PSS consumption. Two case studies are presented that draw upon *Consumer Culture Theory* (CCT) and *Practice theory* (PT) in pluralistic fashion and experts engaged to find ways to generate a dialogue and insights from these two perspectives. A flexible research design was followed with data collected by semi-structured interviews with consumers and experts. Data were analysed using a dynamic template approach.

The findings suggest that some consumers are encouraged to consume PSS as a way to construct identities expressing meanings and ideologies such as *altruism* and *environmental protection*. Consumers need, however, to learn access practices to consume PSS offerings. Furthermore, social- structural elements of living such as social conventions and the physical distribution of sites where consumers work and live prevent them from consuming PSS recurrently. Further research is needed to investigate how PSS consumption inspired by consumers' meanings and ideologies may be collective, recurring and integrated within the social structural aspects of living.

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Catulli, M., Cook, M. and Potter, S. (2016), "PSS Users and Harley Davidson Riders: the importance of consumer identity in the diffusion of sustainable consumption solutions", *Journal of Industrial Ecology*, 21:5 (1370–1379)

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Catulli, M, Cook, M & Potter, S (2017), ' Working with two theoretical perspectives from consumer studies to research Product Service System Consumption'. in *PLATE.*, 17, Delft, Conference Proceedings, 459[1]

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Catulli, M., Cook, M. and Potter, S. (2014)," Mapping Transitions towards Sustainable Consumption: Latitudes, Legends and Declinations in the Interaction between Consumer Culture and Sustainable Business Models", *Consumer Culture Theory Conference June 2013,Copenhagen, Finland*

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[1] Guiding paper circulated to the participants to the expert workshop (see P. 2006)

Glossary and list of acronyms

Term	Definition
ABC	Access Based Consumption
Access	A process by which consumers use and pay for the experience of temporarily gaining the use of products or services (Rifkin 2000)
Access Based Consumption	Transactions that may be market mediated in which no transfer of ownership takes place (Bardhi and Eckhardt 2012)
ANT	Actor Network Theory
Bassinet	A bed for infant from zero to six months. Also the part of a pram where an infant sleeps in
Brand	Distinguishing name and/or symbol (such as logo, trademark, or pack design) intended to identify the products and services of either one seller or a group of sellers, and to differentiate those products or services from those of competitors" (Aaker 1991:7)
Brand Community	Specialised, non-geographically bound community, based on a structured set of social relationships among admirers of a brand (Muniz and O'Guinn, 2001:412).
Capability	A person's ability to achieve various valuable functionings as a part of living (Sen 1993, Nussbaum 2011)
Car Seat	A safety device which is fastened on a vehicle seat and allows safe transport of infants on motorized vehicles
Carrycot	A light cot with handles, similar to but smaller than the body of a pram and often attachable to an unsprung wheeled frame
Case Study	Empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin 1994:13)
CCT	Consumer Culture Theory

Co-branding	Activity where two brands are paired together in a marketing context, including for example communications, distribution and product placement strategies (Grossman 1997, Leuthesser, Kohli, and Suri 2003) or the combination of two brands to create a single, unique product. (Grossman 1997, 36).
Collective	Characteristic of social practices, their being performed by a number of human beings
Competences	Skills and know-how of the practitioners
Consumption	A process by which people acquire, use and dispose of commodified goods (including ideas, services, products, brands and experiences)
Consumptionscape	Nexus of often-contradictory new and modified forces that shape the unique meanings of consumption (Ger and Belk 1996). The environment in which the process of consumption takes places and in which consumers and sellers interact, combined with tangible commodities that facilitate the consumption process (Booms and Bitner 1981)
Customization	Self-conscious manipulation of the symbolic meanings of given products to create or maintain consumers' lifestyle or to construct their identity (Campbell 2005).
DEFRA	Department of Environment, Food and Rural Affairs (United Kingdom)
Distrust	The opposite of trust, the expectation that others will not act in one's best interests, even engaging in potentially injurious behaviour and the expectation that capable and responsible behaviour from specific individuals will not be forthcoming (Lewicki et al. 1998, 439).
EV	Electric Vehicle, a vehicle for transport which is powered by an electric motor and batteries
Functionings	Various things a person manages to do or be in leading a life and is linked to freedom to achieve goals when they want (Sen 1993)
FW	Future Wolverton
ICT	Information Communication Technology

Identity Construction	Co-productive ways in which consumers forge a sense of self with market generated material (Belk 1988)
Ideology	An interrelated set of values and beliefs about the structure of society that constitutes a group's shared perspective (Goode et al. 2017)
Incommensurability	Situation which prevents investigation of relationships between entities using two or more competing (incompatible) systems of orientation, with difference in language and terms, definition and solution of problems and no accepted system of reference to evaluate the two perspectives exists (Scherer 1998)
Infant	Formal or specialised synonym for "baby", the very young offspring of a human
Interdisciplinarity	Communication and collaboration between academic disciplines (Jacobs and Frickel 2009:44)
Isofix base	A base with quick release couplings which allow installation on a car seat on the seat of a vehicle
Isofix coupling	A device which is fixed to the car seat and on which an infant car seat can be fastened with a quick release coupling
Leasing	A payment or series of payment made by a lessee to an owner in return for the use of property, machinery or equipment for a legally agreed medium or long term. From the providers' point of view leasing involves to grant the possession over the medium or long term of such assets in return for the payment of rent from the lessee
Materials	Physical objects such as tools, hardware and infrastructure (Mylan 2015)
Meanings	Representations that enable human cognition (meaning making) and communication
Mediation	A process where intervening aspects such as consumer identities and context elements influence the outcome of a process (Bate et al 2012) such as PSS consumption
NCT	National Childbirth Trust

Offering	Something presented for inspection or sale which can include products, services or a combination of the two
Ownership	An institution which result in an individual having the right to possess and use an asset as and when they want and exclude others from using and possessing the same asset unless this has been granted to them by the owner of the asset (Snare 1972)
Personalisation	Processes that define or change the appearance or functionality of a product to increase its personal relevance to an individual" (Mugge, Schoormans, and Schifferstein 2009:468)
Pluralism (theoretical)	Seeing through multiple theoretical 'lenses' that bring different (sometimes contradictory) assumptions into play (Midgley 2011:1)
Practices	Routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily and mental activities, "things" and their use, a background knowledge in the form of understanding, know how, states of emotions and emotional knowledge (Reckwitz 2002, 249). Routine performances of activities, which have characteristics of repetition, collectivity and socio-materiality (Reckwitz 2002, Schatzki 2010).
Pram	A type of wheeled infant transport, predominantly for early years
PSS	Product Service System
PSS Consumption	A process by which people access, use and return (to the provider) commodified goods (including ideas, services, products, brands and experiences) for an agreed time interval
PSS Offering	Offering of a product, service or combination of the two which is configured as a PSS
PT	Practice Theory
QA	Quality Assurance
REBUS	Re-Engineering Business for Sustainability (project name for the DEFRA funded infant product PSS research)
Recurring	A characteristic of social practices, their being successively performed by human beings

Rental	A payment or series of payments made by a renter to an owner in return for the use of property, machinery or equipment. From the provider's point of view renting involves to grant the possession or enjoyment of such assets in return for the payment of rent from the tenant or renter
Social Convention	A degree of consensus which implies processes of effective uniform transmission of understandings, procedures and engagements" (Warde, 2005:136).
Socio-materiality	Characteristics of social phenomena as intercalated constellations of (social) practices, technology and materiality (Schatzki 2010)
Stroller	Synonym of pram, pushchair, buggy, device which enables transportation of infants on wheels
Structuration	The process by which social structures (whatever their source) are produced and reproduced in social life (DeSanctis and Poole 1994, 128).
Sustainability	Ways of living, working and being that enable all people of the world to lead healthy, fulfilling, and economically secure lives without destroying the environment and without endangering the future welfare of people and the planet" (Johnston et al. 2007,15)
Sustainable Consumption	The use of goods and related products which responds to basic needs and bring a better quality of life, while minimising the use of natural resources and toxic materials as well as the emission of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations" (Seyfang 2006, 384).
TPB	Theory of Planned Behaviour
Trust	Reliance by one person, group or firm upon a voluntarily accepted duty on the part of another person, group or firm to recognize and protect the rights and interests of all others engaged in a joint endeavour or economic exchange (Hosmer 1995,392)
UH	University of Hertfordshire
Value co-creation	Co-creation of value through personalized interactions that are meaningful and sensitive to a specific consumer. The co-creation experience (not the offering) is the basis for unique value for each individual (consumers) and it allows them to co-

	construct and personalize their experiences (Prahalad and Ramaswamy 2004)
Value co-destruction	An interactional process between service systems that result in a decline in at least one of the systems' well-being (which, given the nature of a service system, can be individual or organizational (Ple' and Chumpitaz Càceres 2010)
Value, Functional	Consumers' evaluation of consumption based on what it achieves (Babin and James 2010), practical benefits that the use of goods and services confer to users (Sheth, Newman, and Gross 1991)
Value, Hedonic	The opportunity that possession or use of an object / services gives one to experience feelings, such as pleasure, pride, satisfaction, etc. (Graeber 2001) or the pleasure and satisfaction gained from the use of a product or service (Richins 1994b)
Value, Symbolic	Opportunity that possession or use of an object gives one for self-expression or identity construction (e.g. representation of values in which one believes or of which one believes he/she is endowed) and the association of an object (or a service) with one's personal history (Richins 1994b).
WCH	Watford City Hall
WRAP	Waste & Resources Action Programme, a Government funded charity which supports businesses implementing a circular economy

1 Introduction to the thesis

1.1 Introduction

Since the 1987's Brundtland Report articulated the concept of sustainable development (Brundtland et al. 1987), concerns have persisted about the social and environmental sustainability of consumption (Peattie and Peattie 2009). A popular definition of sustainability is "*ways of living, working and being that enable all people of the world to lead healthy, fulfilling, and economically secure lives without destroying the environment and without endangering the future welfare of people and the planet*" (Johnston et al. 2007,15). Literature on sustainable innovations has proposed the concept of Product Service Systems (PSS) as a potentially sustainable consumption offering. While it has been shown that PSS are not a 'silver bullet' that will resolve unsustainability, nonetheless they are thought to hold significant potential to move society toward more sustainable futures. However, PSS consumption has proved to be challenging with low uptake in consumer markets (Armstrong et al. 2015, Gullstrand Edbring et al. 2016, Pialot et al. 2017). Yet surprisingly little is known about PSS consumption and the field is dominated with a few notable exceptions by somewhat sedentary positivistic views of consumption which privilege rational choice – a mode of decision making rarely followed by consumers.

Consequently, this thesis is a reparative engagement focusing on PSS consumption*.* This first chapter sets out the research background and research problem and relevance for academic theory and policy. The chapter also sets out the theoretical framework of the research, aim and objectives, scope of the study and finally the structure of the thesis.

1.2 Research background

Following the interest in sustainability of consumption (cf. Peattie and Peattie 2009), the strategic context in which this research takes place concerns how sustainability in consumption can be achieved. Consumption is "*the process by which people acquire, use, and dispose of commodified goods (including ideas, services, products, brands, and experiences)*" (Lee et al. 2011,2).

Sustainable consumption combines the two concepts of consumption and sustainability and is defined as,

"*the use of goods and related products which responds to basic needs and brings a better quality of life, while minimising the use of natural resources and toxic materials as well as the emission of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations*" (Seyfang 2006, 384).

Current environmental policy seeks to reduce resources and toxic materials used in consumption through increased resource efficiency, extension of product life cycles and waste reduction (DEFRA 2013b, a, Knight et al. 2013). A possible strategic option to achieve this aim is the development of new eco-efficient technologies to replace existing ones (Gouldson and Murphy 1996) and deliver "sustainable" products for consumption. Despite possible benefits, this option does not resolve the issue of resource depletion because of growth in population and consumption, with consequent increase in material requirement (Mont 2004a, Peattie and Peattie 2009, Vezzoli et al. 2015).

An alternative potential pathway toward more sustainable futures is the dematerialization of consumption through sustainable service innovations (Giarini and Stahel 1993, Mont 2002, Manzini and Vezzoli 2003, 2005) which deliver the function customers are interested in so that products are merely a support for the provision of a service. Many firms now use their products as a basis of services to secure additional value (Baines et al. 2009). Notable examples include Rolls Royce, who provide 'Power by the Hour' instead of jet engines and MAN trucks, who provide 'hours of trucking' instead of trucks. If carefully designed, such offerings hold potential to improve resource productivity and thus may usefully form part of the mix of innovations necessary to help move society toward more sustainable production and consumption (Cook 2014). Offerings for consumption can include products, services and a combination of the two, involving variable levels of standardization and customization (Mittal et al. 1999, Morris et al. 2005). These offerings have often been named Product Service Systems (PSS) (Tukker 2015). A PSS is defined as

"*…a competitive system of products, services, supporting networks and infrastructure*" designed to satisfy demand using fewer resources than traditional business models (Mont 2002,239).

PSS have been conceptualized as business models (Mont 2002, Bocken et al. 2014) or as offerings that feature a different relationship between suppliers and users, where users may not necessarily acquire ownership of a product. Often cited examples of PSS in consumer markets are mobility solutions such as car clubs, e.g. *Zip Car*. Existing literature classifies PSS in many ways but the most popular is a classification in three types (Hockerts 1999, Cook et al. 2006):

- *Product orientated PSS*, where ownership of a product is transferred to customers and added services are provided to help ensure product performance over a given period. Examples include maintenance contracts and warranties.
- *Use orientated PSS*, where a service provider retains a product's ownership rights and the customer purchases use of the product over a specified period. Examples include car clubs such as *Zip Car* or bicycle sharing schemes such as London's *Santander bicycle scheme*.
- *Result orientated PSS*, where a service provider retains a product's ownership rights but, in contrast to use orientated PSS, the customer purchases an outcome/ result of service provision, which is specified in terms of *performance,* not in terms of product use over a period. An example is when a provider sells "cleanness of clothes" to residents in residential estates avoiding the use of numerous washing machines (Yang et al. 2010)

Changes in ownership rights are one of the main ways in which PSS types are differentiated. In traditional product-based consumption, ownership rights are transferred from suppliers to customers in one off transactions at the point of sale. Product orientated PSS follow this model but additionally services are provided. In use and result orientated PSS, providers retain ownership rights. In use orientated PSS, for consumers the product is the focus of provision. In contrast, in result orientated PSS, consumers' focus is a result or an outcome – clean clothes, mobility and so on.

1.3 Sustainability claims of PSS

Interest in PSS is driven by potential environmental and social advantages (Manzini and Vezzoli 2003). From an environmental perspective, for use and result orientated PSS, producer product responsibility is automatically extended over the lifecycle (White et al. 1999). This provides an opportunity to manage products better, particularly at end of the product life cycle. In product orientated PSS, since providers are responsible for use, maintenance, disposal and costs associated with these, profit-seeking firms gain an interest in addressing such issues. For example, by specifying more durable and efficient products for PSS than in traditional product-based consumption.

Initial research suggested that, in theory at least, significant gains in resource productivity would be achieved by consuming PSS instead of traditional products (cf. Goedkoop et al. 1999). Case study research to explore these claims showed that gains in resource productivity vary between PSS types and may be more modest than first thought (Tukker and Tischner 2006, Gottberg et al. 2009, Tukker 2015). Further, gains in resource productivity do not automatically arise from PSS consumption and their realization requires deliberate design. Yet PSS are still thought to be one of the possible pathways to more sustainable futures (Cook 2014). Indeed, Tukker (2015) has linked PSS to the concept of circular economy in which resources are reused, recovered and regenerated to minimise environmental impact (WRAP 2018a). In short, research in PSS consumption is important because diffusion of well-designed PSS solutions could bring benefits of resource efficiency and sustainability.

1.4 Implementation challenges of PSS

Despite the potential sustainability benefits of PSS, such offerings are not widely implemented (Vezzoli et al. 2015), in particular in consumer markets (Rexfelt and Hiort af Ornäs 2009, Tukker 2015). Some PSS like examples of result orientated offerings such as downloadable music and other forms of entertainment have a degree of success (Vernik et al. 2011) and car sharing and bicycle schemes are examples of existing use orientated PSS. On line and downloadable entertainment however faces challenges such as piracy (Ibid.). Use orientated PSS such as bicycle sharing offerings face other challenges, such

as those affecting the Chinese *Mobike* bicycle sharing company and its users in Manchester and Newcastle with a high level of damage, vandalism and theft (Pidd 2018a).

Car sharing companies such as Zip Car have enjoyed some success and growth in membership, however they have a high failure rate, small share of the automobility market and distribution limited to large towns (Catulli et al. 2017). Use orientated PSS offerings in consumer markets include clothes sharing, expresso percolators as well as car and bicycle sharing offerings but rates of diffusion are still poor (Armstrong et al. 2015, Gullstrand Edbring et al. 2016, Pialot et al. 2017). Indeed, several researchers (cf. Tukker 2015) suggest that PSS are not suitable for consumer markets as they are not able to give consumers control over products.

In many western societies, ownership is defined as a property right. Property rights afford consumers control of products, such as the ability to exclude others from using their products and thus freedom to use them as and when they wish (Snare 1972). In contrast when consuming PSS, consumers rely on providers to meet their needs. Control over products may still exist with PSS, albeit to a lesser extent and it is not enshrined in ownership rights but in contractual agreements, a weaker form of institution, which sets out expected levels of service delivery. However, it is not certain whether a body of empirically robust research supports these claims about consumers' concern over lack of control. Indeed, the reasons why PSS are not attractive to consumers might be more complex. Rexfelt and Hiort af Ornäs (2009) claim that there is insufficient depth of research on PSS consumption and culture. The next section therefore outlines the research problem.

1.5 Research Problem and significance of the research for policy

Policy makers have been interested in PSS since the late 1990s and Governments funded reports such as Goedkoop et al. (1999). Engagement at supranational level was exemplified by the funding by the *United Nations Environmental Program* (UNEP) of work on PSS (Manzini and Vezzoli 2005) and the EU funding of multi-national projects such as *SusProNet* (Charter et al. 2004). In the UK, the commitment of Government Departments and businesses is exemplified by the funding and other support for PSS research made available by the *Department for Environment, Food and Rural Affairs* (DEFRA 2013a) and

by the *Waste & Resources Action Programme* (WRAP), a Government funded charity which supports businesses implementing a circular economy (WRAP 2018b). This interest and investment of resources continues despite the implementation challenges (Vezzoli et al. 2015) and the unfavourable assessment of opportunities for PSS in consumer markets (Tukker 2015). Yet, as Chapter 2 explains, there is scant research on PSS consumption, especially from consumer studies perspectives. Importantly, most research on PSS consumption offers a "snapshot" perspective on it (Cook 2014) rather than a view of PSS consumption as it proceeds in time, i.e. a process view of PSS consumption. This is a very important limitation because consumption is frequently defined as a process (Lee et al. 2011) and in this thesis, PSS consumption is defined as *a process by which people consume PSS.*

This thesis focuses on PSS consumption as a process and therefore addresses an important need of policy makers, businesses and academics: to understand PSS consumption better. Since PSS is described as possibly sustainable offering, it is logical to revisit perspectives and methods which are used to research sustainable consumption in consumer markets. Until recent times the dominant approaches in the sustainable consumption field have been individualistic views of consumption rooted in Economics and Psychology, such as consumers' rational choice, attitudes, behaviours and values (Shove 2010). These approaches were challenged on the basis that they are not effective in giving an adequate account of sustainable – or unsustainable – consumption (cf. Shove 2010, 2011). One problem with research focused on attitudes is the 'attitude – behaviour gap', where consumers behave inconsistently with their attitudes (Kalafatis et al. 1999). Other individual perspectives have looked into values, since values have a role in motivating people (Rokeach 1979). Even this approach is problematic because of the 'value-action gap', where consumers' behaviour is not consistent with their values (Blake 1999). Perspectives that are more sophisticated include the Theory of Planned Behaviour (TPB). Supporters of TPB claim that it accounts for social and psychological aspects (beliefs, values, norms and attitudes) and that it has predictive power (Kalafatis et al. 1999). However *all* individualistic approaches have been questioned, because they fail to take into account the obduracy of unsustainable modes of consumption due to social and structural aspects of living (Shove 2010, Watson 2012). In practice, consumers may be interested in taking up sustainable modes of consumption and arguably, they have a responsibility to do so (Whitmarsh et

al. 2011), however they have little freedom to make this change because they are "straitjacketed" by social-structural factors (Watson 2012) such as social conventions (Warde 2005) and physical and infrastructural aspects (Watson 2012). Because of this, considerable attention has been recently devoted to what has been called the "Practice Turn" (Feldman and Orlikowski 2011), with many commentators claiming that *Practice Theory*, a cultural theory rooted in the sociological theories of Giddens (1984) and Bourdieu (1977), offers a more thorough account of sustainable – or unsustainable – consumption (Shove 2010, Watson 2012). In particular, the study of social practices offers opportunity to identify sources of obduracy (Shove 2012) and unsustainability (Shove and Warde 2002, Gottberg et al. 2009) of consumption. In classic PT, the obduracy of incumbent practices comes from social conventions, defined in Chapter 2 (Warde 2005) or rules of the game (Shove 2011), which limit consumers' options. Whilst early PT conceptualises these rules as being only in the minds of human subjects (Giddens 1984, DeSanctis and Poole 1994), Reckwitz (2002) sees practices themselves as structural and therefore outside of the minds of human subjects. A recent version of PT however adds an additional source of obduracy of incumbent practices and this is constituted by the physical and infrastructural elements of the socio-technical landscape (Watson 2012), defined in Chapter 2. PT has also been criticized however, because it over emphasizes social structures and under emphasises the agency, initiative and ultimately responsibility of individuals to assist in the development of more sustainable consumption patterns (Whitmarsh et al. 2011). The situation is that individualistic and social-structural perspectives on consumption are two competing paradigms, which give two competing explanations of failure to consume sustainably:

1) rationalized justification by individuals in the case of individual approaches (Eckhardt 2017)

2) social-structural aspects of living preventing individuals to embrace sustainable consumption in the case of social-structural approaches (Warde 2017).

This contraposition is rooted in a long-standing debate on whether agency or structure are more prominent in establishing social order (Giddens 1984). In summary, the research problem is that whilst research on consumer choice might reveal consumers' interest in and acceptance of sustainable consumption,

including PSS, social cultural factors related to social structure constituted by social conventions, norms and physical structure and infrastructure might make existing modes of consumption obdurate and impede PSS consumption. Thus, research is needed to explore these contradictions. The next section articulates the research perspectives further.

1.6 Theoretical framework of the study

Rexfelt and Hiort af Ornäs (2009) comment that research in PSS in consumer markets or PSS consumption is scarce. Useful contributions have been made since then. However, save for a few examples of sociologies of consumption studies (cf. Vaughan et al. 2007, Mylan 2015) most of the research is informed by individualist approaches. Examples include diffusion of innovation theories focusing on consumers or groups of consumers such as Rogers (1995), (cf. Schrader 1999, Meijkamp 2000, Rexfelt and Hiort af Ornäs 2009) and values research (cf. Piscicelli et al. 2015). Researchers have used methods such as attitude measurement scales to research PSS consumption (cf. Meijkamp 1998, 2000, Schrader 1999, Shih and Chou 2011, Efthymiou et al. 2013, Armstrong et al. 2015, Gullstrand Edbring et al. 2016). Considering the attitude – behaviour gap and the value action gap described in section 1.5, this is problematic and there is a need for research informed by Consumer Studies approaches rooted in Sociologies of Consumption. This thesis therefore draws on two constructivist perspectives, *Consumer Culture Theory* (CCT), a multidisciplinary approach which "refers to a family of theoretical perspectives that address the dynamic relationships between consumer actions, the marketplace and cultural meanings" (Arnould and Thompson, 2005, 868) and Practice Theory (PT), defined in 1.5. This thesis explores PSS consumption using these two approaches, with CCT focusing on consumers and individual choice and PT on their practices. Because of their incommensurability, within this thesis CCT and PT are used in a pluralistic fashion and insights are sought from the findings by following a dialogical strategy (cf. Hammersley 2008), in order to respect their diversity (cf. Stirling 2011). CCT and PT, which informed the aim and objectives of the PhD, are explained more fully in chapter 2. Since little is known about PSS consumption as a process, the nature of the research is exploratory. The passages above suggested investigation of the *dynamics* of a number of aspects to understand PSS consumption, including *social and cultural* aspects such as *conventions* and *meanings* that may shape ways in which consumers construct

their identities and PSS consumption. Crucially as explained in 1.5, cultural aspects include material culture such as materials and competences associated with their consumption, physical structure and infrastructure. Finally, the debate on competing perspectives outlined above requires investigation. Through a literature review, reported in Chapter 2, this study generated the aim and objectives guiding the research underpinning this thesis, which Chapter 2's conclusions explain and justify. The next sections therefore present these aim and objectives.

1.7 Aim and objectives of the study

1.7.1 Aim of the study

To explore and describe the social and cultural dynamics that shape Product Service Systems consumption

1.7.2 Objectives of the study

Based on the review of literature on PSS and on Practice Theory and Consumer Culture Theory that is articulated in Chapter 2, five objectives were developed to direct the PhD research enquiry. The objectives are:

  i.   *To identify approaches to study the social and cultural aspects of Product Service System consumption*
 ii.   *To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction*
iii.   *To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings*
 iv.   *To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption*
  v.   *To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption*

1.8 Scope of the study

As shown in the aim and objectives, this thesis does not discuss the sustainability aspects of PSS; it focuses instead on PSS consumption. The term

"*product service system*" (PSS) (Mont 2002) is used in this research, although the substantive literature draws on contributions focusing on similar concepts such as *eco-services* and others. In this research the focus is on *use orientated PSS*, defined in section 1.2. The reason for this selection is a relevance to policy as academics and policy makers see use orientated PSS as a strategy to extend the life of products (Cooper 2005). The significant support and funding made available to researchers on PSS specifically connected to the extension of product life cycles (DEFRA 2013a, WRAP 2018c, b) demonstrates the interest of policy makers in use orientated PSS.

The research involved two case studies of use orientated PSS in two different contexts:

1. *Re-engineering Business for Sustainability* (REBUS), a PSS featuring infant care products such as infant strollers and car seats
2. *e-carclub*, featuring an electric vehicles (EV) car club.

The REBUS research was financially supported by DEFRA and it was conducted in collaboration with Dorel UK, an infant product manufacturer who owns the *Maxi-Cosi* brand amongst others in conjunction with the *National Childbirth Trust* (NCT). The second case study was conducted with e-carclub granting access to their membership and RADMA, a charity supporting doctoral programmes financially supported it. The rationale behind conducting the two case studies and comparing them is that this supplies unique insights because although they are both use orientated PSS, REBUS grants possession of the products for a relatively prolonged period, whilst e-carclub grants short term use on a "pay as you drive" basis. Considering Tukker's (2015) assertion that control over products is an important consumer requirement obstructing PSS uptake, a decision was made to compare two contexts with two arguably different levels of control.

1.9 Thesis structure

The remainder of this thesis is structured as follows:

Chapter 2 Literature review: this chapter presents a review of the substantive literature on PSS and a review of literature on supporting theories, Consumer Culture Theory and Practice Theory, which are defined and explained. The literature on PSS consumption is reviewed and critiqued. Key debates in the

literature are reviewed. Frameworks for analysis of PSS consumption are examined, in particular the debate on contrasting individual and sociological frameworks. Aim and objectives are justified in the light of literature.

Chapter 3 Methodology: describes the research philosophy, design, strategies and methods used in this research. An exploratory flexible research design was chosen. The research strategy adopted is case study and the rationale for this is presented. The methods selected were qualitative and included observation and in depth thematic interviews. Issues of credibility and robustness of the research are explained

Chapter 4 REBUS: presents the first case study, Re-engineering Business for Sustainability (REBUS). This chapter describes the genesis and development of the case study. Qualitative data are analysed from the CCT perspective first and the PT one after. The chapter describes the rationale for this sequence.

Chapter 5 e-carclub: presents the second case study, e-carclub and describes the genesis and development of the case study. Qualitative data are analysed from the CCT perspective first and the PT one after. The chapter explains the rationale for this sequence

Chapter 6 Dialogue between perspectives: based on expert interviews and an expert workshop, the chapter discusses strategies to draw insights from the results of the separate CCT and PT based analyses of the data generated by the REBUS and e-carclub case studies

Chapter 7 Discussion: compares the findings of the case studies with literature on PSS consumption and the results of the CCT and PT based analysis of the REBUS and e-carclub case studies. It discusses challenges to PSS consumption

Chapter 8 conclusions and direction for research: discusses findings against aim and objectives, draws conclusions to the thesis and discusses the limitations of the research. It presents recommendations for PSS strategists and develops the challenges discussed in Chapter 7 into directions for further research.

1.10 Contribution to knowledge

The thesis makes the following contributions to PSS research:

- Consumers may consider and consume PSS offerings if the meanings and ideologies associated with these offerings help the construction of consumers' desired identities and if consumers can identify with the PSS offering. PSS offerings however need to deliver functional, symbolic and hedonic value for consumers to consume them, though in some consumptionscapes consumers might be amenable to forego some of the value traditional consumption delivers or to make additional efforts or adaptations to co-create value through PSS offerings.
- PSS consumption involves performing access to products involving specific activities and materials. Through access, consumers can co-create and / or co-destroy value
- PSS consumption depends on whether practices performed through PSS offerings and associated elements and practices can co-evolve to enable consumers to perform those practices collectively and recurrently through PSS offerings integrated within the socio-material landscape. This freedom depends on the strength of the links between elements within incumbent practices and the strength of the links of these with other practices, which confirms Mylan's (2015) proposition.

The next chapter reviews literature on PSS consumption, CCT and PT and justifies aim and objectives.

2 Literature Review

2.1 Product Service Systems and Consumers

2.1.1 Introduction

This chapter reviews the substantive literature on Product Service System (PSS) in consumer markets or PSS consumption and the literature on the two theoretical perspectives used as analytical frameworks in the research, Consumer Culture Theory (CCT) and Practice Theory (PT).

Lee et al. (2011,2) define consumption as "the *process* by which people acquire, use, and dispose of commodified goods (including ideas, services, products, brands, and experiences)". As explained in Chapter 1, PSS Consumption is a process by which people consume PSS. The definition adopted for PSS in this thesis is Mont's (2002, 239):

"…*a competitive system of products, services, supporting networks and infrastructure" designed to satisfy demand using fewer resources than traditional business models*"

This review evaluates literature predominantly published in research journals. Some exceptions are made where outputs such as academic theses and commercial or Government reports include seminal insights, such as Charter's et al. (2004) SusProNet and Goedkoop's et al. (1999) reports. Some literature also refers to PSS by other names with several PSS like concepts described by a variety of studies. Table 2-1 summarizes some of the terms used in literature

Term	source
Eco Efficient Services	(Meijkamp 1998, 2000)
Eco-efficient Producer Services	(Bartolomeo et al. 2003, 830)
Sustainable Home service	(Halme et al. 2004)
Usership	(Mont and Emtairah 2008, Scholl 2008:255)
Satisfaction Fulfilment System	(Tukker 2008:412)
Eco-services	(Behrendt et al. 2003)
Eco-leasing	(Cooper 2005,63)
Access Based Consumption (ABC)	(Bardhi and Eckhardt 2012)

Table 2-1 Terms used for PSS like offerings

For the review to be comprehensive, the research explored literature around the concepts listed in Table 2-1 but consistently uses the term 'PSS'. Much of the literature on PSS is rooted in the fields of Information Systems, Business Management and Strategy and Engineering & Design (Boehm and Thomas 2013). This helps explain why most of this literature focuses on technical and design aspects, whilst studies that utilize Consumer Studies are comparatively rare.

The sections of this chapter first reviews PSS literature, which is structured into three periods to reflect three different stages of PSS research:

- definition of the concept;
- further articulation and design guidelines and
- challenges of PSS and consumers.

There is then a discussion on behavioural and sociological perspectives, including Consumer Culture Theory and Practice Theory. The chapter then draws on relevant literature concerning the pluralistic use of Consumer Culture Theory and Practice Theory, explains the aim and objectives of the study and the main conclusions drawn from the literature review.

2.1.2 1993 – 2005: Early exploration of PSS consumption

The initial impetus to early research on PSS consumption centred around concerns that a cultural model of "throw-away society", an expression first used in Life Magazine (1955), shaped current systems of mass production and consumption. Giarini and Stahel (1993) proposed a shift to a service economy focused on the concept of functional sales and their benefits for resource efficiency. In particular Giarini and Stahel's research explored the concept of "servicialization" (Ibid., 48), a conversion from products to services where suppliers retain ownership of products to extend their life cycle. One of their central claims was that suppliers should sell "utilization" (Ibid. 83), the *function* of products rather than the product itself (e.g. mobility and clean clothes as opposed to cars or washing machines). The assumption was that functional sales - functional value, consumers' evaluation of consumption based on what it achieves (Babin and James 2010) - can satisfy customers. Stahel (1997) extended that notion further by introducing the concept of "functional economy, which optimizes the use (or function) of goods and services and thus the

management of **existing** wealth (goods, knowledge and nature)" to achieve dematerialization, the "reduction of material input in industrialized economies" (Hinterberger and Schmidt-Bleek 1999,55).

Goedkoop et al. (1999), White et al. (1999) and Roy (2000) reviewed case studies of offerings such as car clubs and on demand print services to map a number of PSS-like offerings. This early literature compares opportunities for resource efficiency offered by PSS with other approaches such as the ecodesign of products (Roy 2000). In most of the offerings reviewed, products provide the starting point for PSS development. For example, IBM evolved from mainframe supplier to a provider of system solution services such as system integration and Dupont from supplying paint to providing car spraypaint services (White et al. 1999). Other examples include chemical management services, recovering of electronic components through ICT service solutions and carpet lease. They call this trend serviticization.

Much of the initial PSS research emphasised supply side perspectives focused on firms that had already implemented PSS-like solutions. So while it offered some insights on PSS consumption, such insights were based on views of the companies' business managers rather than consumers. In aggregate this work suggests that consumers' interest in PSS is driven by perceived cost and financial benefits, such as avoiding capital expenditure and maintenance costs (Goedkoop et al. 1999). However, this research also conjectures that consumers would see service offerings such as leasing associated with low status (White et al. 1999). Further concerns include loss of guaranteed access to products, costs attached to leasing agreements and prestige confered by ownership of premium products (Ibid.).

Some research on consumers was conducted in parallel with this industry focused work, and this focused particularly on use orientated PSS. Meijkamp (1998, 2000) and Schrader (1999) used a psychological perspective and quantitative methods to measure attitudes to research PSS consumption. By treating PSS offerings as innovations, PSS consumption was conceptualised as diffusion of an innovation, which explains how new "ideas, practices or objects" spread in an economy (Rogers 1995).

Evaluation criteria such as financial savings as well as parking problems and maintenance costs, which are responsibilities associated with car ownership (Meijkamp 1998, 2000, Schrader 1999) would affect consumer acceptance of

auto mobility PSS (car clubs). A car club is an organization which provides its members with access to a fleet of shared cars as and when they need them, normally for short, local trips (Shahen and Cohen 2007, Le Vine et al. 2009). Consumers' "acceptance" of innovations is "a condition between 'only' an attitude and the 'real' behaviour of consumers, thus it is a combination of positive attitudes and behavioural intentions". Therefore, "acceptance describes the *readiness* to adopt a new product or service" (Schrader 1999,110).

Meijkamp (1998) segmented consumers to research acceptance of PSS and revealed that some consumer segments are more likely than other segments to adopt PSS, depending on their attitude and value orientation. For example, adopters are likely to be "environmental altruists" and see cars as just a means of transport, whilst non-adopters are more likely to see cars as status symbols (Ibid.). Consumers can be segmented further in "open-minded" and receptive to PSS type propositions or "ownership-orientated" and "consumption-orientated" consumers (Meijkamp 1998, 2000, Hirschl et al. 2003). Thus, strategies to promote PSS need to target the appropriate segments or they would be likely to fail (Hirschl et al. 2003).

Since consumers attribute symbolic value to certain types of products, such as luxury cars and form close attachments to them, PSS only offers a viable alternative to products in instances that are not rich in "symbolic significance" (Schrader 1999,110). Offerings with significant "personal value" can therefore be problematic for PSS, which requires a functional rather than emotional relationship with consumers for success (Ibid.). On the other hand, Mont (2002) proposed that PSS can deliver added value to consumers, e.g. through customisation. However, ultimately her work questioned whether consumers can really be satisfied with product use and consumption without ownership (Ibid., 244).

Behrendt et al. (2003) and Littig (2000) reported secondary data from case studies of PSS consumption. Their research documents types of products which are more acceptable as offerings for use through a use orientated PSS and explored whether the National context of provision matters. The findings showed that PSS consumption varies between countries, such as the Netherlands, Germany and Austria (Behrendt et al. 2003). For example, in the Netherlands computer leasing is five times more popular than in any other country and mobility PSS such as car clubs have been established in Germany and Austria

(Ibid.). Reasons for such disparities include historical and cultural differences, for example different local infrastructures and propensities to form co-operative groups as well as differences in local demands (Ibid.).

Research shows that consumers may also prefer using products provided through a use orientated PSS when needed occasionally or temporarily, such as when they want to carry fashionable hand bags at social functions, as in such cases it would not make financial sense to own them (Ibid.). Other features of products for use that affect acceptance of PSS consumption include costliness (Littig 2000, Behrendt et al. 2003), time required for booking (Behrendt et al. 2003), prestige of ownership, fashion value and space required (Littig 2000). *Local availability* of products for use is another important aspect for acceptance of use orientated PSS, as consumers need to be confident that these products are accessible near where they live (Behrendt et al. 2003).

Since use and result orientated PSS are principally service offerings, Schrader (1999) and Meijkamp (1998, 2000) drew on SERVQUAL for their research. SERVQUAL is a quantitative model to measure service quality introduced by Parasuraman et al. (1991). It measures a service's performance on five parameters, *Reliability, Tangibility, Responsiveness, Assurance* and *Empathy*. As it measures services' performance, Schrader (1999) and Meijkamp (2000) used SERVQUAL to measure a PSS' performance. Their research proposed that poor on demand availability and access would be problematic for potential PSS consumers. Furthermore, the condition of products (e.g. product cleanliness and state of repair), an aspect of tangibility according to SERVQUAL, would also influence consumer acceptance (Meijkamp 1998, 2000).

By the early to mid-2000s the PSS concept had become of interest in both academia and policy making circles. Multi-country research projects were initiated, often to research sustainable PSS design and implementation, see for instance mepss.nl (2008). One influential study was SusProNet. Published in 2004 by Charter et al. the project report provided the foundation of several publications such as the influential *New Business for Old Europe* (Tukker 2006), *System Innovation for Sustainability* (Charter et al. 2008) and *Product-Services as a means to reach Sustainable Consumption* (Tukker 2004).

Policy makers at supranational level also become interested in PSS. The *United Nations Environmental Program* (UNEP) funded a workshop developed by

Manzini and Vezzoli (2005). The workshop "booklet" conceptualized PSS as a suite of solutions covering three PSS types,

1. Services providing added value to the product life cycle, equivalent to product orientated PSS
2. Services providing final results to customers, equivalent to result orientated PSS
3. Services providing enabling platforms for customers, equivalent to use orientated PSS.

The work claimed that increasingly "consumers are moving away from the traditional concept of product ownership" (Ibid., 2005,15) and are satisfied with the functional value which they can derive from access to products for use. That notion further emphasizes Giarini and Stahel's (1993) claim that functionality is the main rationale for product acquisition and use and led them to theorize that product ownership is unnecessary. This thinking influenced much subsequent PSS research (cf. Sakao and Shimomura 2007, Kimita et al. 2009a, Pawar et al. 2009, Sundin et al. 2009, Bertoni et al. 2011a, Geum and Park 2011).

The SusProNet report suggested that Western culture is generally likely to constrain PSS diffusion (Charter et al. 2004). For example, consumer lifestyles promote individualism and status through material accumulation (Vercalsteren and Geerken 2006). Consumers also have a cultural bias against sharing, for example, they seem unwilling to share, rent or lease software, storage space or computer equipment for privacy reasons (Halme et al. 2005). Mont (2004a, 2004c) therefore proposed that the fit between PSS and consumer culture should be investigated, as emerging findings (cf. Behrendt et al. 2003, Mont 2004a) indicate that PSS might be incompatible with western cultural preferences for product ownership. Following Meijkamp's (2000) and Schrader's (1999) argument that products can have symbolic and emotional value for consumers, Mont (2004a) claims that consumption is shaped by materialism and that the "acquisition of material products is often linked to happiness" (Mont 2004b). This challenges the proposition of much PSS research that delivering product functionality alone is sufficient to satisfy customers and is an important stream in PSS research in the next period under review.

Heiskanen et al. (2005) studied laundry rooms and a PSS for growing mushrooms in the kitchen. Their work suggested that PSS consumption is socially and culturally sensitive. In order to be accepted by consumers, PSS

needs to fit into their "everyday life and usage patterns" (Ibid., 58). Thus, the authors recommended that to ensure a tight fit between PSS solutions and consumers' every day lives, designers and researchers need to interact with potential users when assessing and developing PSS propositions. However, Halme et al. (2006) argued that a cultural preference for product ownership dominates consumption choices. Individuals base their choices on social norms and associate sharing and renting with low socio-economic status and a lack of freedom to organise their lives (cf. Williams and Widebank 2006). Furthermore, infrastructures and market incentives favour product ownership, because suppliers and their distribution systems are configured to sell as many products as possible at as low a price as possible (Halme et al. 2005, Halme et al. 2006). These factors inhibit PSS consumption.

In summary, early literature focused on the views of business managers on PSS consumption. Data were collected through interviews and surveys, with some work based on secondary data on PSS consumption. Studies which collected data directly from consumers were informed by positivistic approaches such as Rogers' (1995) diffusion of innovation theory and used quantitative attitudes surveys often informed by psychological perspectives and quantitative service quality models. Separate streams of research proceeded in parallel, with consumer focused research disjointed from industry focused studies.

2.1.3 2006 – 2011: Further articulation of the PSS proposition

Initial research on PSS was preoccupied with a definition and consolidation of the PSS concept, with different terms, such as eco efficient services and sustainable home services gradually becoming included in the PSS definition. Research with a consumer focus was fragmented, with contributions around eco-efficient services (Schrader 1999, Meijkamp 2000) and PSS research on consumers mostly based on business interviews and secondary sources. In contrast, this second period started with a consolidated PSS concept and research moved to focus on the consumer acceptance of PSS, aspects of PSS consumption and value consumers might seek from PSS.

One problem with PSS at this time was that the term and associated concepts were not known outside circles of sustainability academics and practitioners (Cook et al. 2006). Whilst Behrendt et al. (2003) commented that consumers

may consume PSS instead of buying high price products, from a supply side PSS is viable for high value products that could finance design of service components (Cook et al. 2006). Drawing on qualitative and quantitative data, Gottberg and Cook (2008) researched product, use and result orientated PSS involving household goods and services including lawnmowers, tools, white goods, food and house consumables. The participants in the research involved householders and managers of housing developments in the UK. The work selected housing developments deemed to be of reasonable size and embedded in urban areas, as PSS needs sufficient geographical density of demand to be viable. This requires a sufficient geographic distribution of customers (cf. Donthu and Rust 1989). Utilitarian aspects such as functionality, space saving and convenience can make PSS attractive (Gottberg and Cook 2008).

Mont and Emtairah (2008) analysed case studies of automobility (car sharing) and communal washing centres in Sweden. The research conjectured that consumers felt less attached to "functional" products than to "emotional products" and therefore the former could be more suitable than the latter for PSS. Mont and Emtairah (2008) also described how the two examples of PSS fit within the values of the local cultural context. For example, communal washing centres are accepted in Sweden but not in the UK. If PSS solutions enjoy diverse levels of acceptance in different countries, this could mean that PSS (consumption without ownership) is more compatible with some consumer cultures than with others. Furthermore, PSS might be shaped by these cultures in different ways (Mont and Emtairah 2008, Rexfelt and Hiort af Ornäs 2009). For example, different norms and even regulation make it more difficult for consumers to buy PSS (Rexfelt and Hiort af Ornäs 2009), such as in the need in the UK to have a Consumer Credit License to rent out or lease products. Different living arrangements, such as apartment blocks in Sweden (Mont and Emtairah 2008) shape PSS solutions for laundry.

In this period, research questioned whether the functional value delivered by PSS would be sufficient to satisfy customers. Design orientated research still claimed that functional value should be prioritised (Kimita et al. 2009b, Pawar et al. 2009, Sundin et al. 2009, Bertoni et al. 2011a, Geum and Park 2011, Niinimäki and Hassi 2011). This literature documented methodologies to design customer value in PSS solutions (Sakao and Shimomura 2007, Aurich et al. 2010). Examples of customer value can include energy saving functionality

(Sakao and Shimomura 2007), as well as intangible value such as "sense of belonging", "self-fulfilment" and "excitement" (Sakao and Shimomura 2007, 595). Quantitative software tools such a Sakao and Shimomura's (2007) *Service Explorer* were proposed to assist in designing PSS solutions.

However others, such as Scholl (2008), claimed that more research needs to be conducted into symbolic aspects of PSS consumption such as values, "abstract ideals that represent a person's conception of the desirable" (Rokeach 1973,10). Values, such as *independence* and *freedom*, are important to understand what motivates consumers to consume PSS offerings. Since they represent what is desirable, values embody symbolic aspects of what consumers want to achieve from consumption, *i.e.* symbolic *value*. Symbolic value is the opportunity that possession or use of an object gives one for self-expression or identity construction (e.g. representation of values in which one believes or of which one believes he/she is endowed) and the association of an object (or a service) with one's personal history (Richins 1994b). Values, for example benevolence (Rokeach 1979), are aspects of their personality that consumers want to project (Richins 1994b) and since value is what consumers want to extract from consumption, values are an element of symbolic value (Richins 1994a).

In this period therefore, research also explored other dimensions of value, such as symbolic and hedonic value, the opportunity that possession or use of an object/services gives one to experience feelings, such as pleasure, pride or satisfaction (Graeber 2001). Symbolic and hedonic value are specific to types of consumers and contexts (Morelli 2006, Tukker and Tischner 2006, Morelli 2009), which is challenging to the PSS research community, which sought 'one size fits all' engineering solutions. Therefore, PSS might not be able to deliver the symbolic value that consumers require and which they extract from product ownership (Tukker and Tischner 2006, Scholl 2008). "PSS do not deliver such bonuses (tangible and intangible value). Particularly in a B2C (business to consumer) context (consumer markets), product ownership contributes highly to esteem and hence intangible value" (Tukker and Tischner, 2006,1553). This may hinder PSS consumption.

Morelli (2009) and Briceno and Stagl (2006) commented that PSS value, be it functional or symbolic, is co-created by consumers with suppliers. Value co-creation "involves the co-creation of value through personalized interactions that are meaningful and sensitive to a specific consumer. The co-creation

experience (not the offering) is the basis for unique value for each individual" (consumers) and "it allows them to co-construct and personalize their experiences" (Prahalad and Ramaswamy 2004, 6). Value co-creation associated with PSS is a theme explored by several authors from several social theoretical perspectives. Briceno and Stagl (2006), for example, drew on Max-Neef's (1992) *human needs and satisfiers framework* to explore how suppliers and consumers co-create value. The theory classifies human needs in nine categories and associated infinite satisfiers combined with social capital, the set of "social relations, norms and institutions of a society" (Ibid.,1544). They used a quantitative survey to research a successful participatory community approach to design quasi PSS solutions called *Local Exchange Trading Schemes* (LETS). LETS is a platform for "sharing, leasing and pooling of resources for consumption activities" (Ibid.,1545). The research suggested that although the PSS offering satisfied their needs, most consumers held materialistic values such as status, expressed through possessions. This may mean that consumers tend to prefer product ownership which may affect PSS acceptability.

Vaughan et al's (2007) work on the milk bottle was an early application of sociology of consumption to research PSS-like solutions. The research explored a PSS like solution that has been functioning since the 1880s, where providers retain ownership of the packaging (the milk bottle), collect it after reuse, sterilize and refill it with milk and re-deliver it to consumers for 20 uses on average (Ibid.). The research claimed that consumers associate this type of consumption to old times, traditional community values and purity. One of the reasons for decline is the perceived convenience of bundling milk with other products when shopping at supermarkets. The "planning and management activities" (Ibid., 2007, 124) required of consumers to manage delivery and consumption of milk however are an additional explanation for the decline. This implies that PSS requires efforts in co-creating value by consumers which may hamper diffusion and even make PSS vulnerable to competive solutions requiring less effort.

Morelli (2009) advocated use of ethnographic interviews to explore PSS consumption. He drew on a socio-cultural perspective similar to Actor-Network Theory (ANT), an approach that explores connections between human and non-human actors (Latour 2005), to explore consumers' value co-production with

PSS. His 2009 paper, however, was conceptual and does not report findings of primary research.

Rexfelt and Hiort af Ornäs (2009) used focus groups and interviews to investigate PSS offerings of home heating, thermal comfort, car lease, pay per view TV and clothing rental. In similar vein to Meijkamp (2000) and Schrader (1999), Rexfelt and Hiort af Ornäs (2009) applied Rogers' (1995) diffusion of innovations theory to research PSS consumption. Following Ibid., Rexfelt and Hiort af Ornäs (2009) compared PSS with traditional offerings involving product ownership based on criteria of *relative advantage* as well as *compatibility, trialability* and *observability* to assess its probability of success*.* Benefits that could motivate consumers to engage in PSS consumption include practical and financial advantages in comparison with product ownership, for example financial and space savings, because PSS offer "pay as you use" solutions and products could be returned when no longer needed (Ibid.). In addition, the research indicated that consumers could be interested in use orientated PSS offerings so that they could test products, such as cars, with a view to subsequently purchasing them.

Cook et al. (2006) had noted that only specialists understood the PSS concept and in fact, Rexfelt and Hiort af Ornäs (2009) found it difficult to explain the concept of PSS and its social and environmental advantages to consumers. Participants seem not to understand the meanings and implications of PSS, so the researchers had to frame PSS solutions as renting and leasing schemes. These are a payment or series of payments made by a lessee to an owner in return for the use of property, machinery or equipment (Oxford Dictionary 2012). From the point of view of the provider, renting and leasing involve to grant the possession and enjoyment of property, machinery or equipment in return for the payment of rent by the tenant or lessee (ibid). Understanding in the market of the PSS concept was therefore described by these concepts.

Rexfelt and Hiort af Ornäs (2009) uncovered that consumers associate PSS offerings with "package deals" (Ibid, 679) and comment that added services are seen as an excuse to charge higher prices than for traditional products. Furthermore, consumers distrust suppliers to deliver PSS offerings, for example access to products when needed (Ibid.). Trust is "the reliance by one person, group or firm upon a voluntarily accepted duty on the part of another person, group or firm to recognize and protect the rights and interests of all others

engaged in a joint endeavour or economic exchange" (Hosmer 1995,392). In their work, Rexfelt and Hiort af Ornäs (2009) surveyed their participants about "hypothetical PSS offers" (Ibid., 678), hypothetical examples of PSS, rather than real PSS solutions consumers were able to try. This can be considered a limitation of their study. In addition, Rogers' (1995) diffusion of innovations theory is positivistic and reductionist (Arnould 1989, Pace 2013). Diffusion of innovation theory was originally formulated in a specific national, social and cultural context and is a highly rationalistic and deterministic framework based on assumptions such as, for example, that innovation equates with progress (Greenhalgh et al. 2005). The theory overlooks many behavioural and cultural aspects (Arnould 1989) and has limited predictive power (Hsia-Ching 2010). The application of Rogers' (1995) theory is therefore problematic in contexts different from western economies and cultures. Even if the findings of Rexfelt and Hiort af Ornäs's (2009) work are useful for them, replication of the methodology in other contexts may not be possible.

Le Vine et al. (2009) collected data from consumers via qualitative interviews and diaries. Their research claimed that users accessed vehicles (Ibid.2A1.1) through car clubs (a type of use orientated PSS) to complement their own private cars or access specific types of vehicles for special reasons. Users seek financial savings and dislike being billed when they leave the club car parked whilst they shop or work, because this means paying for time when the car is not used. Shih and Chou (2011) administered on line quantitative surveys, although without a stated theoretical approach. Their work showed that when considering leasing solar power systems consumers are concerned about duration of the lease and associated obsolescence of the equipment, Government subsidies and electricity prices.

One important aspect of PSS, in particular use orientated PSS, is that since products are used sequentially by different consumers, some of these products may require refurbishing or remanufacturing between uses (Mont et al. 2006). Sundin et al. (2009) noted that product remanufacturing is an important aspect of the PSS concept. Remanufacturing is "a process of returning a used product to at least original equipment manufacturer (OEM)'s original performance specification from the customer perspective" (Ibid.,724). Data collected showed that consumers are concerned about the quality of remanufactured or refurbished products supplied through PSS (Gottberg and Cook 2008), therefore

remanufacturing needs to be supported by a quality assurance[2] process and a warranty at least equal to that of a new product (Sundin et al. 2009).

In summary, the review of the literature from this period reveals that positivistic approaches were still dominant in PSS consumption research. The fragmented nature of early PSS research may have limited the generation of important insights on PSS consumption. There were a few examples of research grounded in socio-cultural theoretical approaches with investigators using qualitative methods. Much research overlooked consumer studies theories and this leaves a few directions of inquiry unexplored. These directions for further research could lead to deeper exploration into cultural meanings and symbolic aspects of PSS consumption. Such research could draw on constructivist ethnographic approaches (Morelli 2006, 2009), in depth interviews drawing on sociology of consumption (Vaughan et al. 2007), economic and consumer theories (Scholl 2008) and emancipatory action research approaches (Briceno and Stagl 2006).

2.1.4 2012 – 2018 – Implementation challenges

In the initial period, the work of authors such as White et al. (1999), Goedkoop et al. (1999) and Manzini and Vezzoli (2005) advocated PSS as a way of decreasing resource use in production and consumption activities by severing its link with profit and standard of living but at the same time satisfy customer needs and profit opportunities for providers. This would offer a 'win-win' for producers and providers, users and the environment. The 2006-2011 review period saw efforts to supply prescriptive design formulas but also questions environmental virtues and notes the limited implementation of PSS and its feasibility especially in consumer markets. Vezzoli et al. (2015) called this delay in implementation the "PSS implementation challenge".

Prominent researchers sought to downplay opportunities for PSS in consumer markets. In his literature review, for example, Tukker (2015), building on previous literature, claimed that PSS would not work with consumers. In various cases, PSS could offer higher tangible and intangible value to users than

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[2] Quality assurance is a "planned and systematic pattern of all actions necessary to provide adequate confidence that the item or project conforms to established technical requirements" (Buckley and Poston 1984,37).

products they owned, however due to high labour intensiveness PSS is more expensive to deliver than products owned and operated by consumers.

Most importantly, consumers feel a need to have a sense of control over products (Tukker 2015). One "of the most valued issues for consumers is to have control over things, artefacts, and life itself" (Tukker 2015, 88). PSS are perceived as being less accessible than competing products consumers own (Schrader 1999, Tukker and Tischner 2006, Catulli 2012, Gullstrand Edbring et al. 2016) and they limit consumers' behavioural freedom, with attitudinal research suggesting that consumers prefer using their own products as this gives them more control (Gullstrand Edbring et al. 2016). From this perspective, ownership of products is necessary to grant the level of behavioural freedom consumers seek (Snare 1972). Ownership confers rights to consumers to use and dispose of products they own as and when they please (Ibid.). This control is important to consumers and they see PSS offerings as unpractical and complicated. Consumers state that these offerings do not enable them to use the products when they wish (Gullstrand Edbring et al. 2016). Ownership is considered a decisive factor in PSS adoption (Mont 2004a, 2004c, Briceno and Stagl 2006, Halme et al. 2006, Tukker and Tischner 2006, Vercalsteren and Geerken 2006, Williams 2006, Scholl 2008). Consumers "attach far greater value to owning the products they use and having full control over how to use them" (Tukker, 2015,11). It "will never be easy for a PSS provider to overcome the perception that he is putting his consumer in a relatively dependent position or influencing, even prescribing, how his consumer should behave" (Ibid, 11). Following these arguments, also supported by Halme et al. (2006), Tukker (2015) was dismissive about opportunities for PSS in consumer markets.

These specific claims about the role of control and ownership in shaping PSS consumption, however, need further probing with suitable research approaches. Tukker (2015,80) admitted, for example, that in his review he focused on "literature from the engineering and design fields". Indeed, Boehm and Thomas (2013) reviewed PSS literature spanning the fields of Business Management, Information Systems and Engineering & Design. Their work reported a lack of connectivity between these different streams of PSS research, for example apparently identical phenomena are described with different terminology (Pawar et al. 2009, Boehm and Thomas 2013). The "consumer research" (Boehm and Thomas 2013, 254) stream is disconnected from other streams and it is not

always acknowledged by researchers in the three fields. Some of the PSS consumer research, moreover, lacked clearly stated research perspectives and methods (Ibid.). This might explain the reductionist claims of some of the PSS research cited and exemplified by Tukker (2015). It would be helpful if PSS researchers across different fields of PSS research accepted a common set of terms and concepts (Boehm and Thomas 2013) and shared insights in PSS consumption.

Indeed, further research on PSS consumption, was conducted in this period to both test and challenge the claims of PSS unfeasibility in PSS markets. Such research sought deeper insights in PSS consumption, to investigate whether control and ownership are the only decisive aspects.

In this period, to research PSS consumption, researchers used qualitative methods, such as focus groups and interviews (cf. Catulli 2012, Schotman and Ludden 2014, Armstrong et al. 2015, Pialot et al. 2017) more than in the 2006-2011 period. Often research combined these qualitative approaches with surveys to explore PSS consumption to identify "factors" which could determine PSS acceptance or lack thereof. Firnkorn and Müller (2012), Le Vine et al. (2014b) and Le Vine et al. (2014a) investigated car clubs drawing on secondary data from existing studies and on line quantitative surveys based on Likert scales. Catulli (2012) drew on qualitative data to explore a hypothetical PSS solution based on infant products. The work confirmed that quality assurance of refurbishing is a key concern where products are pre-used.

Pialot et al. (2017) found that consumers are averse to entering long term use orientated PSS contracts for vacuum cleaners and expresso machines as they claim that this would create a situation of dependence and they would loose out if suppliers went out of business. The findings also conjectured that consumers are sceptical about the environmental benefits of PSS (Ibid.).

Subscribers to car clubs have less control over their access to a vehicle provided by the car club than to their own car (Le Vine et al. 2014). The level of consumer acceptance of car clubs and the likelihood that they remained a member and used the system was affected by the nature of their journeys, for example driving to work or shopping for groceries (Le Vine et al. 2014a, Le Vine et al. 2014b). The introduction of car clubs can lead to a reduction in miles driven and car ownership (Le Vine et al. 2014). Firnkorn and Müller (2012) claimed that users of car clubs tend to be:

1) younger than 35,

2) more educated than National average,

3) employed full time and

4) postpone purchase of new cars or even give up car ownership.

Le Vine et al. (2014) claimed that users have higher income than average Londoners. An important aspect of the design of a car club is whether it allows for round trips – where drivers need to return the vehicle where they accessed it - or point-to-point journeys, where drivers can leave vehicles at their destination (Ibid.). These features affect whether drivers are confident of being able to access the vehicle on their return journeys (Ibid.). The number of prospective subscribers to point-to-point car clubs in London in 2014 was around four times the number of prospective subscribers to round trips car clubs. This might mean that consumers prefer the flexibility of point-to-point car clubs and indicates that the configuration of the PSS offering matters.

Extending the debate on value from the earlier period (cf. Scholl 2008, Morelli 2009, Briceno and Stagl 2006), Bertoni et al. (2013) explored multidimensional value and propose the role of *Value Analyst*, a professional charged with conceptualizing customer value in design. These authors articulate the conception of value in three dimensions,

- *Product based* -traditional product performance or functionality
- *Service based* – operational costs, customization benefits and service consistency
- *Relationship based* value - proactivity, trust, long term commitment, shared norms / mind sets - based on the idea of supplier-buyer relationship

The authors however did not distinguish between "value" and "values". Although Pezzotta et al. (2012) claimed that value is multidimensional, they did not explore this further. In contrast, Van Ostaeyen et al. (2013) claimed that customers co-create value in use with suppliers. Cook (2014) also claimed that consumers may have a role in PSS design and co-creating value and questioned the view that solutions necessarily map onto established PSS definitions and typologies. Designers should recognise the social meanings of PSS as well as their functionality. Pialot et al. (2017) developed the value co-creation theme further and proposed that provider-consumer relationships via a web platform

or an "app" could co-produce functional, emotional and ethical value through collaboration. This concept formed part of their proposed "upgradable PSS", a *hybrid service-product system* based on "an artefact that can upgrade its functionality during operation (like software) and remanufacturing stage" (Ibid., 539).

In the previous sections it was seen that whilst PSS is a significant term for researchers, customers and business managers construct PSS as rental and leasing offerings (Rexfelt and Hiort af Ornäs 2009). In this period an alternative market understanding of PSS emerged, this was PSS as a subscription offering (Armstrong et al. 2015, Petersen and Riisberg 2017, Pialot et al. 2017). The term "subscription" is a business model where customers pay a subscription price to have access to products or services (Burez and Van den Poel 2007, Johnson et al. 2008). This may be an additional term by which market actors such as providers and customers conceptualize PSS.

Gullstrand Edbring et al. (2016) and Armstrong et al. (2015) used psychological approaches such as attitude measurement, using Likert scales, to research PSS consumption. In both cases, the research also drew on qualitative methods such as focus groups. The research proposed that age groups differ in their attitudes towards PSS, for example younger consumers are more open to PSS than older ones (Efthymiou et al. 2013, Gullstrand Edbring et al. 2016). In respect to situation of use, PSS may be preferred for specialist products used infrequently by consumers, such as party dresses, fashionable bags used for special occasions and carpet cleaners (Armstrong et al. 2015).

Concerning product types, consumers have positive attitudes to long-term rental of products such as white goods and cookers provided through PSS, because these arrangements could shift responsibility for maintenance and repair to providers (Gullstrand Edbring et al. 2016). Consumers also seem willing to consume PSS based on household furniture products such as tables and shelves (Ibid.). Consumers are, however, averse to products provided through PSS which come into contact with skin, such as soft furnishings, mattresses and similar products (Gullstrand Edbring et al. 2016; Armstrong et al. 2015). Consumers even discriminate between different types of products which are in close contact with the skin, such as infant car seats and pushchairs (Catulli and Reed 2017). The latter research*,* which draws on *Personal Construct Psychology* (PCP), a theory of personality and cognition which explores people's

world views by analyzing their own *constructs* (schemas or ways of seeing the world) (Brophy et al. 2003), indicates that consumers are concerned with the safety, cleanliness and good state of repair of refurbished products such as pushchairs. In summary, one of the aspects shaping consumers' acceptance of PSS may be the type of artefact involved and their assured quality (Armstrong et al. 2015; Gullstrand Edbring et al. 2016).

Pialot et al. (2017) proposed that consumers see PSS consumption as a dependent relationship with suppliers. Other research has suggested that consumers are averse to long term liabilities of renting products (Catulli, 2012; Gullstrand Edbring et al. 2016) and to having to pay regular fees such as installments and monthly service charges (Armstrong et al. 2015; Pialot et al. 2017). This is an issue of trust in providers involving pricing fairness but also service delivery, such as access on demand. In the case of automobility, consumers perceive that car ownership is more flexible than PSS providing access to cars for use (Gullstrand Edbring et al. 2016). For example, consumers could use their own cars in emergency and they doubt this would be possible through PSS (Le Vine et al. 2014).

Positivistic approaches to research were used in this period to study PSS consumption. However this latter stage sees a further move compared with the previous periods towards constructivist research on PSS consumption by using Consumer Studies. These approaches offer insights on consumers' relationships with artefacts, for example emotional attachments to products and their use of products to help construct their identity at different life stages and creating product affiliations (Karanika and Hogg 2012). These perspectives also offer insights on the processes through which consumers extract functional and symbolic value from consumption. Such research draws on a range of cultural theoretical perspectives to study PSS consumption. These approaches include socio-cultural theories such as:

a) Axiology or theory of values, on which Piscicelli et al. (2015) draw by using attitude scales to measure values based on value inventory theory (Schwartz 1992) and to segment consumers of PSS offerings by the values they share;

b) *semiotics*, "the study of signs and their meanings, or the representations that enable human cognition (meaning making) and communication" (Santamaria et al. 2016, 18). Drawing on semiotics, designers can inform their strategies to design PSS offerings that deliver high symbolic as well as functional value.

Designers can create this symbolic value through communication processes such as advertising, design, packaging and branding. These processes should be supported by the identification and elaboration of the best cultural codes upon which to build the relevance and desirability of innovative PSS through these communications. Cultural codes are "socially agreed conventions and practices familiar to the members of a culture (Ibid, 2016, 17). The meanings and symbolic features of sustainable innovations that form the symbolic value of PSS can shape innovative PSS as new, exciting new ways of belonging and being (Ibid. 2016). Semiotics therefore can be useful to investigate the symbolic value of PSS consumption.

c) Latour's Actor-Network Theory (ANT), combined with Fletcher's (2010) concept of practices and processes of use. Drawing on ANT, Petersen and Riisberg (2017) proposed a view of value co-creation through research on a baby clothing PSS. This offering was configured as an "actor network" consisting both of human and non-human actors. This connected socio-material network includes users, employees, consulting services company, the garments themselves and associated laundry facility. Within that network, parents' diffidence in sharing intimate products as seen by Armstrong et al. (2015) and their emotional attachment to items of garments emerge as stumbling blocks for PSS and impede the circulation of items to other users.

Useful contributions to PSS research accrue from work which focuses on *Access Based Consumption*, defined as "transactions that can be market mediated but where no transfer of ownership takes place" (Bardhi and Eckhardt 2012, 1). Access is a process by which suppliers "sell access, the 'experience'" (Rifkin 2000, 44) of temporarily accessing products or services. Research on Access Based Consumpion is useful because the contexts studied are car clubs and car sharing solutions, which authors describe as a use orientated PSS (cf. Meijkamp 2000, Goedkoop et al. 1999, Rexfelt and Hiort af Ornäs 2009), so the findings offer insight in PSS consumption.

Bardhi and Eckhardt (2012) conducted a study of Access Based Consumption of automobility solutions (car clubs) drawing on anthropological theories of sharing and access within the field of *Consumer Culture Theory* (CCT), defined in section 2.2.1 of this chapter. Bardhi and Eckhardt (2012) characterised access based consumption by six dimensions:

1. temporality (consumers see it as a short-term solution),

2. anonymity,
3. market mediation,
4. consumer involvement,
5. type of accessed object and
6. Political consumerism.

Analysis of qualitative data across these six dimensions indicated that users do not identify with accessed products, which may not deliver symbolic value. Participants consider access-based consumption a temporary solution and are concerned about possibility of contagion from previous users. Contagion is the "disgust consumers feel when they are aware that a product they use has been physically touched by someone else" (Bardhi and Eckhardt 2012,8). Consumers also seemed averse to co-create value in the service by making efforts to return cars clean and refuelled. On the positive side, consumers who are politically involved and interested in environmental protection seemed favourable to car club membership (Ibid).

Baumeister (2014) and Baumeister and Wangenheim (2014) also studied Access Based Consumption of car clubs but through the lens of Ajzen's (1991) Theory of Planned Behaviour (TPB), a theoretical framework rooted in social psychology, which allows investigation of the influence that attitudes, personal and cultural determinants and volitional control have on consumers' purchasing intentions (Kalafatis et al. 1999). TPB claims to account for social and psychological aspects (values and attitudes for example) and that it has predictive power (Ibid). The research claims that the initial perceived risk of using access based automobility declines as consumers become accustomed to it.

Vaughan et al's (2007) and Bardhi and Eckhardt's (2012) works are isolated applications of consumer studies perspectives to research PSS like solutions. In PSS research, however, other authors have explored the utility of these approaches. For example, Mylan (2015) proposed Practice Theory (PT)[3], as a framework to study PSS consumption. Mylan (2015) theorized that PSS consumption requires changes in consumer *practices*. These changes involve re-alignment of practice elements (cf. Shove et al. 2012):

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[3] Defined and explained in section 2.2.4 of this chapter

- meanings, which are symbols, norms and collective conventions imbued in practices
- Competences, which are the skills and know-how of the practitioners and
- Materials, which are physical objects such as tools, hardware and infrastructure (Mylan 2015).

Mylan (2015) framed PSS consumption as the uptake by human subjects (consumers) of practices performed with materials accessed through PSS solutions. The strength of linkages between practices' elements (materials, competences and meanings) of traditional consumption stabilizes incumbent practices (cf. Shove et al. 2012) and affects PSS consumption. By focusing on practices, PT can usefully help explore the obduracy of traditional consumption based on ownership (Mylan 2015), by looking at

1. how tight the links of elements are within a practice performed with owned products
2. how tight the links are between this practice and other practices and,
3. The capability of PSS propositions to establish such links.

For example, research findings have linked car ownership with meanings of independence and control (Choo and Mokhtarian 2004) and automobility through PSS propositions (such as car clubs) might not be able to replicate these links, because drivers needed planning and booking vehicles and were not able to access them as they pleased. Practices performed using materials accessed through PSS might not succeed in competing with existing practices because of the strength of linkages between practices (Mylan, 2015). For example, automobility is linked to practices such as commuting to work and travel to meetings and this might make the diffusion of a mobility PSS difficult, because practitioners need to be able to rely on vehicles without having to meet access costs whilst at work.

In summary, whilst some of the research on PSS, (cf.Tukker 2015) dismissed the viability of PSS in consumer markets based on a presumed primacy of ownership and control in consumers' choices, other researchers questioned that claim and explored PSS using a number of approaches that support more in depth constructivist research.

Sociologies of consumption offer insights on the complexes of practices consumers perform and the materials they use in these performances. These

aspects can help explore the tensions PSS may face in designers' attempts to implement them. The next section discusses the gaps in knowledge identified by the review.

2.1.5 Discussion

This review of PSS literature covered three periods of PSS research and offers several insights on PSS consumption. PSS research has used various types of individualistic economics, institutional and psychological approaches such as attitudinal research (cf. Schrader 1999, Gullstrand Edbring et al. 2016), personal construct psychology (cf. Catulli and Reed 2017) and institutional theory (cf. Mont 2004a) amongst others. Sophisticated individual behavioural approaches such as Ajzen's (1991) Theory of Planned Behaviour (TPB) are rare.

These perspectives reveal some recurrent themes. Financial and other practical advantages such as space saving motivate consumers to adopt PSS, as they could afford the use of products which are normally too expensive for them to purchase and maintain. Other aspects such as reason, frequency and duration of use can make PSS perceived as more viable than ownership, in particular when consumers rationally compare time of utilization in relation to cost. Another recurring theme is the ability of consumers to access products on demand, which recurred in literature in various conceptualizations, for example control (Tukker 2015), reliability and responsiveness (Meijkamp 1998, Schrader 1999, Meijkamp 2000) or on demand access (Schrader 1999, Gottberg and Cook 2008).

Other behavioural approaches unveil additional recurring themes of an "emotional" nature. For example, consumers may not trust PSS' safety because of damage to products by other users or contagion (Gullstrand Edbring et al. 2016, Petersen and Riisberg 2017). Quality assurance of reconditioning processes is therefore required to reassure customers. For similar reasons, the type of product matters for PSS acceptance. Products in close contact with the skin discourage sharing, whilst some products may not present that challenge.

One of the characteristics of some PSS literature is that it looks at PSS from a supply side perspective. The initial emphasis on functional value is a symptom of this. Even when recognizing that consumers need to extract symbolic and hedonic as well as functional value from PSS, the literature looks at this value

as something that can be "designed in" PSS (cf. Sundin et al. 2005, Sakao et al. 2009, Lindahl et al. 2014). This may be an effect of the lack of connectivity between fields such as Engineering & Design, Business Management & Strategy and ICT highlighted by Boehm and Thomas (2013). In effect, the review reveals that PSS does not mean much to consumers (Rexfelt and Hiort af Ornäs 2009), who in fact conceive what academics define PSS as renting, leasing (Ibid, 2009) and subscribing to offerings (Armstrong et al. 2015, Petersen and Riisberg 2017, Pialot et al. 2017).

Literature suggests that some cultures may be more open to the PSS concept than others, because they are more open to sharing products. Types of consumers also matter, because some may be more materialistic and prefer ownership whilst others may be more open to sharing. Despite these suggestions, researchers from individualistic approaches have not explored these cultural aspects in sufficient depth. Applications of consumer studies theories in PSS consumption research are rare.

In contrast with these supply side views of PSS, insights from other theoretical approaches, such as Sociology of Consumption, reveal aspects of PSS from a consumer perspective. For example, PSS consumption may require planning and managing activities such as milk consumption and bottle washing (cf. Vaughan et al. 2007). The sequential use of products in use orientated PSS requires reconditioning of products after each use and consumers' efforts to leave products as they wish to find them. Consumers may not be willing to contribute such efforts, so this may require suppliers to govern customers through sanctions such as extra financial charges. In contrast with the supply side explained earlier, research of PSS from a demand perspective originates from research on access-based consumption. This demand view of PSS consumption is grounded in consumer studies and disconnected from the mainstream literature on PSS.

This discussion indicates that PSS consumption has far more complex aspects than Tukker's (2015) somewhat reductionist suggestion that the key aspects which matter in PSS consumption are control and ownership. Tukker and Tischner (2006) conjecture that ownership is necessary to create symbolic value as reported earlier. However, marketing theory is rich in cases where symbolic value is created by services (Chen 2008, Joy and Li 2012) such as golf clubs

and art galleries, so the assertion that ownership is necessary for PSS to create symbolic value needs to be probed through appropriate perspectives.

The individual approaches mentioned earlier arguably informed Tukker's (2015) claim of the importance of control for consumers in challenging PSS. Of course if control, intended as Snare's (1972) rights allowed by ownership including the right to use products as and when pleased, was a key consumers' requirement, then PSS diffusion would be challenged.

Control is an aspect of *individual* consumers' aspirations (Hamerman and Johar 2013, Cutright and Samper 2014, Chen et al. 2016). Consumers' desire for control over the environment and their circumstances and ability to manage outcomes of their actions drives individual consumer behaviour (Cutright and Samper 2014). This individualistic bias may have limited the generation of useful insights to understand PSS implementation challenges. Individualistic approaches, such as attitude research and studies based on consumer values (cf. Piscicelli et al. 2015), have limitations such as the so-called 'attitude behaviour gap' and 'value action gap'.[4] Despite belonging to two different research traditions, these two concepts are about the same failure in predicting consumers' behaviour. Whilst attitudes and values tell us what people think, they do not tell us what they actually do (Kalafatis et al. 1999). Thus, the possible insights offered by these research approaches are limited.

In addition, individualistic research perspectives have been criticised because they overstate responsibility and efficacy of consumers in adopting sustainable consumption (Shove 2010). These approaches overlook the role of social, cultural and material barriers, structural aspects such as social conventions, policy and infrastructure (Shove and Walker 2010, Watson 2012).

Whether PSS is viable or not in consumer markets may depend on further aspects than Tukker's (2015) point about control, such as the type of product involved, context of application (Dewberry et al. 2013) and the functional, hedonic and symbolic value sought from PSS by consumers as noted by Scholl (2008). The interplay of these elements may be favourable to PSS consumption as well as unfavourable.

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[4] Defined in Chapter 1.

Overall, the review of literature on PSS consumption unearthed the following gaps in knowledge:

1. Literature discussed PSS and value, and more than one writer e.g. (Tukker and Tischner 2006, Scholl 2008) theorized that PSS needs to create symbolic as well as functional and hedonic value. However, little research has explored whether and how PSS can create symbolic value, so research is necessary to investigate what meanings and ideologies PSS can be associated with as part of the symbolic value they can deliver.

2. A closely associated gap is whether and how consumers can identify with a PSS offering, whether it can assist creation of their identity and what types of identities are compatible with PSS consumption

3. Mylan (2015) has proposed the use of Practice Theory to study PSS but her work does not research PSS consumption, rather it demonstrates how PT could be applied to traditional consumption. Research is needed on whether and how PSS proto-practices can be recursively performed, become collective and develop links within and with other practices

4. Literature has also theorized value co-production by consumers and suppliers through PSS (cf. Vaughan et al. 2007, Morelli 2009, Cook 2014). There are indications that consumers do not necessarily desire to perform this work (Vaughan et al. 2007, Bardhi and Eckhardt 2012), including the tasks linked with access but insufficient research has been conducted on the nature of the work needed of consumers to co-create value. This is important because this effort can be a constraint to PSS if consumers are not willing to perform it

5. A great deal of literature theorized the importance of culture in the study of PSS e.g. (Behrendt et al. 2003, Charter et al. 2004, Mont 2004a, Mont and Emtairah 2008, Rexfelt and Hiort af Ornäs 2009) and this contrasts with the scarcity of research using cultural perspectives.

These gaps make the sociological and cultural perspectives of consumption relevant to this research (cf. Midgley 2011). Drawing on these theories could support exploration of the role of aspects other than consumer choice in PSS adoption and diffusion, such as social conventions, policy and infrastructure overlooked by some of the PSS research. The next sections consider CCT and PT from the sociology of consumption. After an introduction on Sociologies of

Consumption, the first section therefore deals with CCT, the individual approach and then PT. This structure is replicated in the remainder of the thesis.

2.2 Sociologies of Consumption

This section introduces Sociology of Consumption as an approach to research PSS consumption. Two theoretical approaches are then described which were used to research the topic. Sociology of Consumption has been shaped by insights from anthropology, (cf. Douglas and Isherwood 1996, Miller 2010) and sociology, (cf. Baudrillard 1998). Culture is a key feature of these perspectives. Culture "is the very fabric of existence, meaning and action" (Arnould and Thompson 2005, 869), the "accumulation of shared meanings (values), rituals, norms and traditions among the members of an organization and society" (Solomon et al. 2007,377). The importance of culture is that it is the "glue" that keeps society together, as well as the "software of society", the aspect which "governs" society and therefore shapes consumers' choices (Arnould and Thompson 2005, 2007). Culture includes mores, customs, institutions, values, rules and artefacts, hence material culture. Culture further divides in sub-levels, for example there can be a national culture, a local culture, as well as sub-cultures, "networks of meanings, styles, outlooks and lifestyle practices that are uniquely expressive of a particular socioeconomic milieu" (Thompson and Troester 2002, 553) and micro-cultures, specialized sub-groups of individuals who have their own vernacular, ethos and rule expectations (McCurdy 2006).

Sociology of Consumption has many strands (Stillerman 2015). This chapter however deals only with two, *Consumer Culture Theory* and *Practice Theory*. CCT and PT, explored below are classified as cultural theories, although CCT leaves more latitude to individual psychological aspects and, in particular, individual consumer behaviour.

2.2.1 Consumer Culture Theory

Consumer Culture Theory, is a multidisciplinary approach which "refers to a family of theoretical perspectives that address the dynamic relationships between consumer actions, the marketplace and cultural meanings" (Arnould and Thompson, 2005, 868. It can be classified as a constructivist cultural theory and it focuses on the study of cultural complexity (Arnould and Thompson

2005). CCT encompasses the contextual, symbolic and experiential aspects of consumption, ranging from acquisition to consumption and disposal (Joy and Li 2012). CCT is founded in anthropological research (cf. Douglas and Isherwood 1996, Miller 2010) and is also influenced by the sociological theories of Bourdieu (1977). CCT is not an homogeneous theory (Askegaard and Linnet 2011), drawing from such disciplines as anthropology, sociology, media studies, critical studies and feminist studies (Joy and Li 2012). It explores the tensions between the ideologies of consumption that shape behaviour and the individual free choice of identity creation (Arnould and Thompson 2007). Ideology, an interrelated set of values and beliefs about the structure of society that constitutes a group's shared perspective (Goode et al. 2017) has three representational elements by which a movement's activists portray: 1) their goal, 2) themselves and 3) their adversary (Kozinets and Handelman 2004). Ideologies and their role in shaping consumption (Micheletti 2003) are an important focus of CCT (Arnould and Thompson 2007, Dominici et al. 2013, Belk 2014b). CCT therefore offers a view of ideology as shaping structure but also consumer behaviour, which crucially, retains a view on individual actions, i.e. the agency of consumers (Askegaard and Linnet 2011). It therefore helps overcome the limitations of the behavioural and economic perspectives (Joy and Li 2012).

The diversity of CCT makes it a "catch all" perspective with confused boundaries. However, CCT's focus of analysis is the individual consumer or groups of consumers. CCT historically has focused on a number of phenomena, ranging from the very individual and introspective to the very social (Ibid.). Eleven areas of interest of CCT are listed below (Ibid.),

- Consumer identity projects
- Consumer identity and marketing myths
- Global consumer identity projects
- Consumer identity and post-assimilationist research
- Identity, public policy and transformative consumer research
- Market place cultures
- Brand communities and consumer resistance
- Socio-historic patterning of consumption
- Institutionalization of consumption ideologies

- Mass-mediated Market place Ideologies and Consumers' interpretive strategies
- Consumptionscapes (consumption environments) and consumer experiences.

Consumptionscapes are a central construct in CCT research. A consumptionscape is a nexus of often contradictory new and modified forces that shape the unique meanings of consumption (Ger and Belk 1996b). An alternative definition of consumptionscape can be obtained by paraphrasing Booms and Bitner's (1981) definition of servicescape. A consumptionscape is the environment in which the process of consumption takes place and in which consumers and sellers interact, combined with tangible commodities that facilitate the consumption process.

CCT's diversity makes it important to state clear boundaries to the investigation (Dominici et al. 2013). Consequently, CCT in this thesis focuses on

a. Consumer identity projects
b. Market place cultures
c. Brand communities and consumer resistance, associated with PSS consumption.

CCT can usefully help explore the role of PSS consumption in the construction of individual identities. Here consumer identity construction is conceptualised as the co-productive ways in which consumers forge a sense of self with market generated material (Belk 1988). CCT can help uncover "cultural scripts" such as values, symbols and ideologies (Bengtsson and Ostberg 2006:87). CCT research offers insights in how different consumer identities present distinct characteristics and behaviours and therefore different patterns of consumption. CCT also offers insights in how consumers co-create functional, hedonic and symbolic value with their consumption (Arnould and Thompson 2005, Askegaard and Linnet 2011, Arnould 2013, Dominici et al. 2013). Value is "the *subjective* assessment of positive and negative consequences of using a product or service" (Sheth et al. 1991). CCT offers a nuanced view of value co-created with and by consumers. Types of value explored, as well as functional value, include symbolic value, hedonic value, social value and economic value. Table 2-2 offers alternative definitions of value found in literature.

Value - in the sociological sense: conception of what is ultimately good, proper or desirable in human life; in the economic sense: the degree to which objects are desired, particularly, as measured by how much others are willing to give up to get them" (Graeber 2001:1)

Functional Value - the practical benefits that the use of goods and services confer to users (Sheth et al. 1991), such as. moving from A to B, quenching one's thirst, affixing a picture to the wall

Symbolic Value - the opportunity that possession or use of an object gives one for self-expression or identity construction (e.g. representation of values in which one believes or of which one believes he/she is endowed); the association of an object (or a service) with one's personal history (Richins 1994b), which is linked to emotional feelings

Hedonic Value - the opportunity that possession or use of an object / services gives one to experience feelings, such as pleasure, pride, satisfaction, etc. (Graeber 2001) or the pleasure and satisfaction gained from the use of a product or service (Richins 1994b)

Exchange Value - the financial value an object (e.g. a product) can confer the owner / user upon exchange for money with other parties (Graeber 2001). This can be associated with a value, security (Hohti 2010), as people may perceive an object, such as a house or car, as "stored" wealth that can be converted to financial value if needed. Exchange value is normally associated with artefacts (e.g. products); however, it is applicable to services as an exchange between user and user as well as exchange between producer and user. E.g., a musician can perform for money; an individual who bought a ticket for a concert can exchange said ticket for money.

Table 2-2 Alternative conceptions of value

CCT can usefully help investigate consumer-object relationships and their role in constructing identities (Joy and Li 2012) and therefore enables understanding of the implications of consumption without ownership.

One aspect of these relationships is the process by which consumers adapt objects to their needs by customizing and personalising these objects. Personalisation of products can be defined as *"processes that define or change the appearance or functionality of a product to increase its personal relevance to an individual" (*Mugge et al. 2009, 468)*. Customization* is the self-conscious manipulation of the symbolic meanings of given products to create or maintain consumers' lifestyle or to construct their identity (Campbell 2005). By these processes, consumers construct their identity (Mugge et al. 2009) and produce emotional bonding with products (Ibid.).

CCT explicates products' symbolic aspects by studying how *brands* embody them*. A brand is a *"distinguishing name and/or symbol (such as logo, trademark, or pack design) intended to identify the products and services of either one seller or a group of sellers, and to differentiate those products or services from those of competitors"* (Aaker 1991, 7). Brands are also cues that can assist the delivery of feelings of affiliation to consumers, by belonging to a

brand community. A brand community is a "specialised, non-geographically bound community, based on a structured set of social relationships among admirers of a brand" (Muniz and O'Guinn, 2001, 412). An example of this is demonstrated by the affiliation of consumers to communities formed around iconic brands of mobility products, such as Harley Davidson motorcycles (Schouten and McAlexander 1995), Alfa Romeo (Cova 2012) and Hummer vehicles (Schulz 2006).

A feature of brands is *co-branding*, an activity where two brands are paired together in a marketing context, including for example communications, distribution and product placement strategies (Grossman 1997, Leuthesser et al. 2003). Co-branding is "the combination of two brands to create a single, unique product." (Grossman 1997, 36). Co-branding can reap major benefits for marketers of partner organizations, for example (Ibid.):
- Information sharing (which may include access to a customer database)
- co-financing of the co-branding activities
- delivery to the customer of an integrated value added proposition (Blackett and Boad 1999, Prince and Davies 2002)
- creation of added value for example in terms of enhanced brand awareness, increased sales, premium prices, customer reassurance, access to cutting edge technology (Grossman 1997)
- decreased costs to enter new markets (Blackett and Boad 1999).

A special case of co-branding is the pairing of a commercial proposition with a cause related brand, such as a not-for-profit organization, which can build positive meanings by associating a brand with a worthy cause (Till and Nowak 2000, Hamlin and Wilson 2004). Co-branding is a productive strategy because it offers opportunities to multiply meanings and amplify symbolic value (Askegaard and Bengtsson 2005), although with a lower opportunity for management control (Ibid.).

Belk's (1988) claim that consumers use possessions to construct their identities seems in agreement with Veblen's (1899) theory that consumers use their possessions to project status. Further literature gave even more importance to ownership of artefacts. Consumers care for materialism and are attached to possessions (Richins 1994b, a). They value ownership of products, not only to project meanings about themselves (Barone et al. 1999), to signal social

position and for security (Douglas and Isherwood 1996, Livette 2006, Hohti 2010). Ownership can even be a fetish (Catulli et al. 2016) and consumers can consider it indispensable to gain social acceptance and affiliation (Schouten and McAlexander 1995). Wallendorf and Arnould (1988) claimed in fact that ownership is the key cultural universal function of consumption. However, recent CCT research offers views that challenge the notion of centrality of ownership. Consumers' relationships with possessions are dynamic and change with time. People "grow out" of their possessions (Karanika and Hogg 2012). Infant products such as pushchairs for example are linked to liminal states of consumers, which are associated with their transitions between life stages, such as the transition into parenthood (Thomsen and Sørensen 2006). Consumers' disposal decisions differ for products which are linked to their identity in comparison with products which are not (Belk 1988, Wallendorf and Arnould 1988). More recently, research has uncovered differences in relationships with different types of meaningful products. For example, a consumer's relationship with a possession over time changes depending on whether the possession is (Karanika and Hogg 2012):

- an *affiliation related* possession
- a *possession of steady value for self*, such as musical instruments and other objects of entertainment value,
- a *possession which has a decreasing symbolic value*, such as products which project status (for example, as a luxury car gets older and less fashionable) or
- A possession of *increasing value to self*, such as memorabilia.

Consumers can dispose of products which have a role in creating their identity, such as apparel, for recycle (Trudel et al. 2016). The importance of owning certain meaningful products therefore may decline over time. Finally, CCT research theorizes that when sharing, consumers can develop a sense of ownership (cf. Belk and Llamas 2012). By touching and acquiring knowledge of shared products, consumers gain a degree of control over them (Belk 1988) and can incorporate them into their extended self (Peck and Shu, 2009). Thus while formal ownership rights may not be transferred to consumers when they access products via PSS, research on sharing proposes that access may induce perceived ownership (Belk 2014a, b).

All this reveals that the relationships of consumers with possessions are complex and dynamic and CCT can offer a nuanced view able to explore what artefacts are more suitable to establish the customer relationships suitable for PSS.

In addition to consumer – product relationships, CCT also emphasises the role of consumers and suppliers as culture producers rather than merely culture carriers (Arnould and Thompson 2005). This assists understanding of how they can improvise new behaviour, which can align with or conflict with existing social conventions (Moisander and Pesonen 2002, Williams and Widebank 2006, Gabriel and Lang 2015).

The role of corporations in changing consumer behaviour through the exercise of power and dissemination of meanings is also a focus of CCT (Kozinets and Handelman 2004, Arnould and Thompson 2005, Joy and Li 2012). These meanings may include materialism (Richins and Dawson 1992) and environmental protection (Moisander and Pesonen 2002) and can be incorporated in new social conventions (Zhao and Belk 2008), which can resolve conflicts of innovations with established conventions. These cultural co-production systems can seduce consumers into lifestyles and use of associated products (Joy and Li 2012).

Bardhi and Eckhardt (2012) used CCT to investigate *Access Based Consumption* (ABC), defined in 2.1.4. The concept of Access was first theorised by Rifkin (2000). ABC can be placed on a continuum of market mediation, from supplied by a community based or not-for-profit organization to supply by profit led organizations (Bardhi and Eckhardt 2012). In Bardhi and Eckhardt's (2012) study of Zipcar, the provider creates value by providing a use orientated PSS, however it still needs some of the value to be co-created by users, e.g. by cleaning and refuelling cars before returning them (ibid.). Bardhi and Eckhardt (2012) found that consumers did not feel they belonged to a Zip Car brand community. In short, CCT research offers insights on use orientated PSS (Ibid.) and result orientated PSS, such as internet facilitated file and music sharing (Belk 2014b). For a CCT view of change processes in consumption it is useful to consider CCT literature on innovation and the next section explores it.

2.2.2 Theory of change in consumption from the CCT perspective

Arnould (1989) and Pace (2013) proposed a CCT view of changes in consumption. Pace (2013) conceptualized these changes as adoption of innovations. From this perspective, consumers may consume alternative PSS offerings instead of acquiring ownership of products.

Pace (2013) described the uptake of the Google Glasses innovation. Google Glasses are eyeglasses with an integrated, wearable and connected microcomputer, which allow wearers to access information by interacting with the device with their voice (Ibid.). Google Glasses were in their second version in 2017 (Levy 2017) and were forecasted to sell over 21 million units in 2018 (statista.com 2018). Consumers integrated Google Glasses in their cultural landscape by associating the product with positive or negative meanings which help consumers utilize the product and brand to construct their identity (Pace 2013). As culture producers (Joy and Li 2012), consumers create part of these meanings, which can include memories of exceptional experiences recorded by Google Glasses, ease of travel facilitated by readily available information or possible dangers of distraction as well as a feeling of being monitored. Consumers may try and subsequently consume – or not – the offering depending on these meanings. In the traditional consumption of private cars, consumers acquire ownership of a car, possibly through a purchase hire agreement. At the end of their cycle of use, consumers might sell the car on to other consumers or trade it in for another vehicle (KeyNote 2017b). Alternatively, consumers may acquire possession of a car through a leasing agreement (KeyNote 2017a). Bardhi and Eckhardt's (2012) case study describes consumers' engagement with an alternative automobility offering, Zipcar, a use orientated PSS-like offering. Consumers associated that offering with cost savings in rapport of duration or frequency of use but also with environmental meanings linked to consumers' political convictions (Ibid.). Thus, some users integrated Zip Car in their cultural landscape (Pace 2013) and consumed it.

Marketing theorizes that a strong brand encourages consumers to try new offerings by reassuring them of their quality (Brexendorf et al. 2015). Supplier communications by providers include messages delivered through advertising on web sites to induce consumers' consumption of novel offerings. Providers try to associate key meanings to their brand such as savings and environmental protection through these communications (Pace 2013). These messages may

be considered part of creative processes because they involve skilled marketers in creating narrative and visuals.

Arnould (1989,256) claimed that changes in consumption depend on the compatibility of meanings of new offerings with the "expressive needs of the individuals", i.e. their identity. Arnould (1989) further theorized that changes in consumption occur when there is conflict over meanings "at the point in the social structure where such conflicts occur" (Arnould 1989,261), for example conflict over the affordability of cars or their costs when they are needed only temporarily (Bardhi and Eckhardt 2012). As a result of that process consumers may assimilate or not, the PSS offering within their cultural landscape (Pace 2013).

Consumers may respond to PSS offerings differently depending on their identities (cf. Kozinets et al. 2008). These identities might include:

- *materialistic consumers*, who value acquisition and the means of acquiring possessions (Richins and Dawson 1992),
- *voluntary simplifiers*, consumers who have elected to consume less (Craig-Lees and Hill 2002),
- *pragmatic parents*, those parents who compare costs to time of use, e.g. connected with having a child only and
- *fully embraced* parents, who are emotionally involved with parenting (Thomsen and Sørensen 2006) to the point of wanting to retain infant products as mementoes after use.
- *nomadic consumers* "reterritorialized consumers who engage in serial relocation and frequent short-term international mobility" (Bardhi et al. 2012).

Nomadic consumers, for example are likely to be less interested in possessions than materialistic consumers (Bardhi et al. 2012), therefore they may be more likely to consume PSS offerings than acquire ownership of products.

2.2.3 Summary and insights

In summary, CCT can assist the conceptualization of *PSS* as an alternative to product ownership (cf. Bardhi and Eckhardt 2012). CCT helps understand meanings and value attributed to membership of user groups and meanings associated with relationships with objects including ownership, rights to modify

a possession and hence meanings associated with lack of ownership. CCT can also help explore negative connotations of ownership, such as responsibilities and hindrance attached to it (Ibid.). CCT therefore provides a framework to investigate values, ideologies and functional, hedonic and symbolic value associated with use orientated PSS.

Returning to Shove's (2010) claim (seen in 1.2) on failure to consume sustainably despite apparent consumer amenability to do so, the next section describes PT as an approach which explores sources of obduracy that hinders the co-evolution (cf. Crosbie and Guy 2008) of practices with PSS consumption.

2.2.4 Practice Theory

Practice Theory (PT) is a cultural theory, which analyses social practices to describe how human subjects make and transform the world in which they live through their daily routines (Feldman and Orlikowski, 2011). PT has evolved from the work of sociologists Bourdieu (1977) and Giddens (1984) and was influenced by others such as Schatzki (1996). PT adopts social practices, what people do (Bueger 2014), as the object of research to help explain how social beings make and transform the world in which they live through their daily routines (Feldman and Orlikowski 2011). A practice is a "routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily and mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotions and emotional knowledge" (Reckwitz 2002, 249). These elements are also conceptualized as *materials*, *meanings* and *competences* (Shove et al. 2012). Social practices are routine performances of activities, which have characteristics of recurrence, collectivity and socio-materiality (Reckwitz 2002, Schatzki 2010). Examples are routines such as food preparation, cleaning clothes and automobility (Halkier and Jensen 2011, Mylan 2015). A practice exists as an entity which has enduring existence when it is recurrently performed (Watson 2012).

Since meanings are conceptualized as "motivational knowledge" in PT (Reckwitz 2002), PT acknowledges that human beings are driven by motivations and therefore pursue individual agency; however, human action is shaped by social structure and *collective* elements such as rules and conventions (Warde 2015).

Conventions are "*a degree of consensus which implies processes of effective uniform transmission of understandings, procedures and engagements*" (Warde, 2005,136). These elements have generically been referred to as "rules of the game" (Shove 2010, 1278). PT therefore is a dialectic approach between human individual agency and social structure, as whilst human subjects do deliberate action, this action is informed by the wider culture which is embodied in them (Kitchin and Howe 2013). This implies that consumers' action is constrained by socio-material structures.

Whilst traditional approaches to study consumption have focused on consumers' individual needs and wants to be satisfied (Sheth et al. 1991), PT theorizes that it is *collective* social practices and the changes in these which shape consumer needs and therefore consumption (Warde 2005). Traditional approaches to study consumption limit their focus to acquisition and overlook the use and disposal stages of consumption (Peattie 2001, Stål and Jansson 2017). In contrast, practices shape behaviour and consumption during use (Warde 2005). PT "shades off" consumer decisions associated with acquisition of products and services (Mylan 2015). The focus is shifted from consumers to practices, "what people do and feel" (Warde 2005, 132).

There are multiple versions of Practice Theory. The version of PT by Shove et al. (2012) to study sustainable consumption draws on innovation studies literature such as Geels (2005a) and Kemp et al. (2007) and appreciates the "role of things and objects" (Bueger 2014,384). PT is thus informed by socio-technical perspectives, explores the role of materials and infrastructure in shaping social change (Shove et al. 2012, Watson 2012, Bueger 2014) and offers opportunities to explore the role of material culture and context, addressing a limitation of CCT (cf. Dominici et al. 2013).

Using the elements of materials, meanings and competences, social practices are performed by human beings (Shove et al. 2012). Whilst they perform practices, human beings *appreciate* practices and materials:

- *Appreciation* is the process of attributing meanings to materials and practices (Warde 2005), so human beings attribute meanings to these. Practitioners also *appropriate* materials.
- *Appropriation* is a process which occurs as human subjects use products in their practices and involves wear and tear of products (Ibid.), so human subjects consume materials and finally dispose of them (Ibid.).

For example, when a practice such as cooking is performed, it integrates meanings, such as healthiness and wholeness of the food, competences, such as knowledge used to cook the food and materials, such as crookery and food (Halkier and Jensen 2011). Whilst human subjects perform these practices, they appropriate pots, pans and food (by using and consuming them) and appreciate them with meanings such as *wholesomeness* and *healthiness* (Warde 2005, 2015). In order to appreciate and appropriate materials, of course consumers need to acquire them (Warde 2017). Mylan (2015) associates the process of *acquisition* of goods (Daloz 2010) through market exchange (Warde 2005) with purchasing. Acquisition however receives little attention by PT research, as practitioners are studied whilst they perform mundane practices, which is relevant to sustainability (Shove and Warde 2002) using materials the acquisition of which is somewhat confined to the past (Warde 2017).

Changes in practice dynamics may stimulate the emergence of new practices. Practices dynamics derive from how people adapt improvise and experiment when performing practices (Warde 2005). Resultant dynamics include, for example, multiplication and differentiation of practices and associated proliferation of materials used in these practices (Mylan 2015). For example, lighting differentiates into security and ambience lighting, followed by multiplication into different types of lights, security and atmosphere lights (Ibid.).

The establishment of new practices requires human subjects to develop new competences. For example, when cars arrived on the scene of personal mobility practices at the end of the 19th century, automobility practice evolved and practitioners formulated competences to repair and drive vehicles. These competences then travelled with the materials to perform these practices (Shove et al. 2012). PT offers a description of how elements travel to new contexts of practices. New materials can emerge as human subjects adopt new technologies to support and alter social practices. Competences are codified (e.g. as learning programmes or handbooks) and passed to new practitioners. This involves decontextualizing this knowledge (i.e. abstracting it from the practices where it is currently used) to then reverse it, i.e. integrate it in new contexts and practices (Shove et al. 2012). Meanings may be codified and travel from other practices and once codified, meanings and competences can travel by libraries and today, the internet into new practices.

In the case of Nordic Walking, a type of recreational walking practice promoted by a manufacturer of purposely modified skiing poles, the practice was shaped by the integration of materials, the poles, with existing elements, such as meanings of healthy life and outdoors and competences (walking skills) formulated by practitioners. The practice of Nordic Walking therefore is the result of the integration of these elements during performance by practitioners (Pantzar and Shove 2010). For example, the walking poles, meanings of healthy living, competences to use the poles migrated from cross-country skiing to Nordic walking (Ibid.).

PT can help understand reproduction of practices supported by new elements, such as product or service innovations, by looking at how people are *recruited* into practices and how these reproduce socially. Reproduction is a process by which new practices are performed by an increasing number of newly recruited practitioners (Pantzar and Shove 2010, Shove et al. 2012).

Practices integrate into *systems or complexes (Schatzki 2010)* of practices, interrelated practices and elements including supporting networks and infrastructure which extend to regulations, policies, market and culture (Watson 2012). Practices form links between elements within a practice and with other practices. The tighter these links are, the more obdurate are the practices (Mylan 2015). For example, in the practice of private automobility, the materials used, motor cars, are tightly linked with meanings of independence and freedom (Choo and Mokhtarian 2004). Further, the practice of automobility is linked with other practices such as employment, shopping, sports and social functions with which they form integrated bundles or complexes (Shove et al. 2012, Watson 2012), so that changes in consumption involve the replacement of whole complexes of practices (Shove et al. 2012) rather than isolated practices.

Practices are further stabilized by the socio-technical landscape, the exogenous environment including aspects of society such as material and spatial arrangement of cities, transport and energy infrastructure (Geels 2004, Watson 2012). For example, private automobility is in part obdurate because of the location of places of work and out of town shopping centres and the lack of availability of public transport to move from and to these locations. For a PT

view of change in consumption it is useful to consider PT literature on innovation and the next section explores this literature.

2.2.5 Theory of change in consumption from the PT perspective

PT conceptualizes change in practices as a "new combination of materials, images and skills" Pantzar and Shove (2010,458) or transition to a new socio-technical system (Geels 2005b, Geels 2011, Watson 2012) as well as evolution of practices (Crosbie and Guy 2008) which, influenced by institutional actors (Pantzar and Shove 2010, Shove 2010), shapes consumption. As new elements are introduced on the scene (Shove et al. 2012), practices align with these elements (Mylan 2015). Alignment is a process where practices co-evolve with new products, business models and infrastructure (Crosbie and Guy 2008, Mylan 2015). Further, change in practice is a "*collective accomplishment*" (Pantzar and Shove 2010,457).

PT can therefore help explore how incumbent practices may co-evolve (cf. Crosbie and Guy 2008) with PSS offerings and shape PSS consumption. PT offers insights on how consumers are recruited to new practices and how these new practices take hold or fade away (Shove et al. 2012). PSS offerings are alternative to practices using owned materials because they are novel combinations in consumer practices of meanings and competences with the materials (cf. Ibid.), for example new ways to secure the use of products other than purchasing them and new meanings such as environmental efficiency.

Shove et al. (2012) use the term "proto-practice" to designate new practices that human subjects take up following the introduction of new elements, such as materials, meanings and competences. A proto-practice is a newly introduced practice which has not yet established links between elements within it or links with other social practices (Ibid.) and been recursively and collectively performed and socio-materially integrated (Schatzki 1996, Reckwitz 2002). A proto- practice thus becomes an established practice when it acquires features of recurring performance, collectivity and socio-materiality.

For example, smart mobile phones initially had weak market acceptance, as they were far more expensive than traditional mobile phones. They successively supplanted the traditional technology when links were established with practices such as internet browsing, e-mailing and texting and stronger links were

established with these competences and meanings of fashion (Barkhuus and Polichar 2011). At the same time, the link between the incumbent practice of using traditional phones and fashion and between the proto-practice and costliness were broken. Thus, the embryonic proto-practice evolved to a novel but established communication practice by aligning with other elements and practices involving not only talking on the phone and texting but also e-mail and internet browsing (Ibid.).

Change however meets with resistance, of which the challenges to PSS implementation (Vezzoli et al. 2015) are an example. PT conceptualizes this resistance as obduracy or inertia of incumbent practices (Watson 2012, Mylan 2015), because of tight links between elements within practices and between practices and other practices (Mylan 2015) as described in 2.2.4. Failure of the proto-practice to achieve recurrence and align with practice elements inhibits PSS consumption. For example, in spite of attempts by policy makers and detergent producers to promote uptake of low temperature laundry, consumers still favour high temperature laundry (Mylan 2015). Laundry practices are shaped by conventions, for example the links between temperature and effective cleaning (ibid.). These conventions are shaped by links between laundry and other practices such as personal hygiene, food preparation and housekeeping (Ibid.). These linkages reinforce the notion that cold water does not clean clothes.

Pantzar and Shove (2010) claim that providers of offerings may not have complete control over how practices are recurrently performed by practitioners and therefore over how they reproduce, i.e. whether the practice continues recruiting new practitioners and therefore diffuses. Links between practices within complexes (Shove et al. 2012) may give practices limited freedom to co-evolve (Crosbie and Guy 2008).

The alignment of practices with PSS offerings can be opposed by social conventions (cf. Warde 2005, Shove and Walker 2010, Warde 2015) and infrastructure (Watson 2012). For example, consumption practices may not align with use of materials accessed through PSS because this conflicts with conventions such as ownership (cf. Snare 1972) or with the practice of remodelling materials or "DIY remodelling practices", processes of modification and adaptation of products to suit specific needs (Grubbauer 2015). Remodelling practices are a form of appropriation, which can take place during

daily consumption routines inspired by functional considerations (*ibid*). Remodelling practices would not align with PSS without ownership because the established convention is that human subjects cannot modify materials they do not own, as explained by Snare (1972). In summary as described in section 2.1.4, in Mylan's (2015) PT informed conception PSS can be seen to require evolution (Crosbie and Guy 2008) in consumer *practices*, involving institutional players and infrastructure (Heiskanen et al. 2005, Mylan 2015).

2.2.6 Summary and insights

In summary, in the PT view of changes in practices, human subjects perform proto-practices using materials accessed through PSS offerings which arrived on the scene (cf. Shove et al. 2012). Within these proto-practices, links need to be made between their elements, and the proto-practices need to make links with other social practices in order to become established social practices, be recurrently and collectively performed and reproduce (Shove and Walker 2010). PT can give insights into how incumbent modes of consumption are obdurate despite the amenability of some types of consumers to consume PSS offerings. PT may usefully describe how new elements such as PSS offerings can integrate with other elements of a proto-practice supported by these offerings and gain stability. Its focus on social change and on the life of the elements of practices, materials, meanings and competences (Bueger 2014) offers a good insight into the changes in practices following:

a) the introduction of new elements such as PSS offerings,
b) the possible demise of existing elements and
c) dynamics of recruitment of practitioners to practices based on PSS (Shove et al. 2012).

Practice Theory therefore provides a framework to investigate PSS consumption. Drawing on PT should help address some of the gaps discussed in section 2.1.5. PT may enable thorough exploration of the meanings that PSS is associated with as proposed by Cook (2014), of the competences required (or not) of consumers, of understanding of the obduracy of conventional consumption based on ownership and of the dynamics of PSS consumption.

2.3 Justification for using CCT and PT

This section justifies the use of using two constructivist approaches, CCT and PT, in this PhD research. As mentioned in section 2.2.5 above, from a PT perspective consumption of a PSS offering as an alternative to use of own products begins when new elements of materials, meanings and competences arrive on the scene (cf. Shove et al. 2012). Practices change because of human subjects' creativity and experimentation (Warde 2005). PT however does not focus on individual mental processes (Swidler 2001), overlooking the agency of individuals' decisions in favour of practices. This is problematic as it misses the creative processes of individuals in improvising proto-practices (Askegaard and Linnet 2011).

CCT can complement PT's framework, compensating for its limitations. Although similarly to PT, it is a cultural perspective, CCT conceives consumers as capable of deliberate action and choice (Joy and Li 2012) and enables analysis of:

a) the creative mental processes of individual consumers when considering ways to co-create value through using accessed PSS offerings

b) the value created by the meanings that consumers associate with a PSS brand

c) Ways in which these meanings help consumers construct their identities.

A possible limitation of CCT is that results might be affected by social desirability (Bengtsson and Ostberg 2006), participants for example may describe their consumption as environmentally sound, as this is what they think researchers expect. CCT's focus on the individual overlooks other actors and the role of social and material structure, infrastructure and context in shaping behaviour (Dominici et al. 2013). Failure to consume sustainably is explained in CCT with individual consumers' rational or rationalized justifications (Eckhardt 2017), such as high costs or insufficient value. PT offers an alternative explanation of obduracy of traditional consumption by addressing the very issues CCT overlooks, such as the socio-technical landscapes shaping effect on daily life's incumbent practices (Watson 2012). Although individualist CCT and social-structural PT are considered competing (Warde 2005, Shove 2010, Warde 2015), the use of the two in this research explores the possibility that these two perspectives might co-exist and may perhaps inform different types of policy

interventions, social marketing communications and investments in infrastructure. For example, as explained in section 2.1.5, if a favourable attitude of consumers towards the PSS offering does not result in its consumption, a social-structural account could perhaps explain that failure to consume PSS offerings. Similarly, the lack of focus of PT on the individuals' responsibility (Whitmarsh et al. 2011) may limit the opportunities to explore what consumer identities are compatible with any given rules of the game (Bueger 2014). As Shove et al. (2012,78) admit, "if we were to home-in on the life of any one practice or any one individual, we would need to add more detail". Shove et al. (2012) for example are concerned with how recruitment into practices of human subjects is shaped by individuals' "dominant projects", such as marriage, undertaking a career or entering parenthood. The study of individuals' motivations is thus necessary to the inquiry, as motivation (conscious or unconscious) moves people to perform practices (Giddens 1984). In summary, the use of CCT and PT aims to explore:

1) The role of individual consumer choice in shaping PSS consumption;

2) The role of social – structural aspects in shaping practices performed with materials accessed through PSS offerings.

2.3.1 Typical methods used in CCT and PT research

Methods used in CCT research include in depth interviewing with consumers in their everyday consumption context (Bengtsson and Ostberg 2006). An example of this are the interviews with Zipcar drivers conducted by Bardhi and Eckhardt (2012). CCT also uses ethnographies where the researcher is a participant or non-participant observer, an example is the study of Harley Davidson motorcyclists by Schouten and McAlexander (1995). Having purchased motorcycles, the researchers embedded themselves in a Harley Owners Group (HOG) chapter to research the identities of motorcyclists. CCT also uses historical research based on secondary methods (Bengtsson and Ostberg 2006). Secondary methods are used in studies such as consumers' rebellion to the market system conducted by Kozinets and Handelman (2004).

Methods used in PT research are known as "praxiography" (Bueger 2014). PT uses case studies as a research strategy (Cavanagh 2013, Mylan 2015). Within

case studies the methods include participant and non-participant observation, interactions (Bueger 2014), including service interactions (Cavanagh 2013) and ethnographic interviews (Halkier and Jensen 2011, Cavanagh 2013), expert interviews (Bueger 2014, Mylan 2015) and documentary analysis of secondary sources conducted to understand the context (Halkier and Jensen 2011, Bueger 2014, Mylan 2015) or "sites" and background knowledge (Bueger 2014). An expert is considered someone who is or has been participating in a practice on everyday basis or someone who has observed that practice for a substantial time (Ibid.). With this definition, parents using infant equipment on a daily basis and drivers of EVs are considered expert participants (cf. Ibid.). Managers at companies supplying these products can be considered expert observers. Documents analysed can include handbooks, manuals and sets of instructions that can give clues on how practices are performed (Ibid.). Historical documents are also important as they give clues on changes in practices.

CCT and PT in summary use similar ethnographic or qualitative methods, for example"in depth" thematic interviews, although because of its focus on practices, PT relies more on participant and non-participant observation. Both theories draw on secondary research to obtain an historical understanding of the research context.

2.4 Pluralism

The sections above indicate the use of CCT and PT would be appropriate for this PhD research and described commonalities of methods. However, it is important to note that CCT and PT have different ways of defining problems and units of analysis. These are individual consumers for CCT (Arnould and Thompson 2005) and practices for PT (Feldman and Orlikowski 2011), therefore the two perspectives are incommensurable (Blaikie 1991, Rossman and Wilson 1994, Shove 2011). Two such paradigms are incommensurable when they have different competing systems of orientation (e.g. concepts, ideas or assumptions) in respect to the definition or solution of a concrete problem, so that a coexistence of the different perspectives is not possible and there is no accepted system of reference to evaluate the competing perspectives objectively (Scherer 1998, Kuhn 1970). Different paradigms cannot provide a single theoretically integrated narrative (Shove 2011). Rather, as "different

paradigms exist in parallel" (Shove 2011, 263), they should be operationalized in parallel and generate insights by "friction".

Shove (2011) comments that contrasting paradigms are useful because they generate different definitions of a problem, in this thesis the problem being to gain understanding of PSS consumption. This research therefore drew on CCT and PT in a pluralistic fashion, with the analysis proceeding separately and in parallel. To explore the relationship between CCT and PT to find ways to make sense of the results, the next sections are concerned with theoretical pluralism and interdisciplinarity, which is used here not only to explore the relationship between disciplines but also contrasting approaches. This is necessary to develop a deeper understanding of the specific issues of using two theoretical perspectives, which required the review of specific literature. For simplicity in this section, the term "dialogue" is adopted to signify an iterative juxtaposition and comparison of the results of the two separate analyses of data in order to make sense of the respective insights they offer and the implications of the insights from one set of results for the other.

2.4.1 The need for pluralism

Whilst some academics support unification of fields (Knudsen 2007), most literature, as will be discussed in Chapter 3, advocates the use of pluralist approaches in research. There are four dimensions of pluralism in research (Midgley et al. 2016):

1. *Theoretical Pluralism*, "seeing through multiple theoretical 'lenses' that bring different (sometimes contradictory) assumptions into play (Midgley 2011,1);
2. *Methodological pluralism*, the "theory and practice of drawing upon methods from two or more different paradigmatic sources and using them together within a single study" (Midgley et al. 2016,2)
3. *Methodical pluralism*, to "use a range of methods in support of practical purposes (Ibid.) and
4. *Ontological pluralism* (Knudsen 2007), different ways, kinds or modes of being (Turner 2010) or multiple objects to research.

Pluralism at various levels has been advocated to research social and governance problems that call for "throwing everything at them" approaches, such as sustainability, crime and war (Jacobs and Frickel 2009, Fielding 2012,

Turnheim et al. 2015, Geels et al. 2016, Graff 2016) and by professional and applied fields of research (Wall and Shankar 2008, Fielding 2012). For example, Midgley (2011) sees theoretical pluralism as associated with practice rather than pure academic knowledge. Thus whilst incommensurability problems might advise against it and some theoretical perspectives are more "isolationist" than others (Scherer 1998), pragmatic considerations connected with use of findings in policy or business may justify it.

The fragmentation of analytical approaches to investigate sustainability issues is a research problem (Barry et al. 2008, Turnheim et al. 2015). Each approach to research generates only partial understandings of pathways to sustainability (Turnheim et al. 2015, Geels et al. 2016). Since no single perspective can answer all the important questions, research done using any single approach is only partially useful (Scherer 1998). These arguments together with the requirement for economies of scale could justify integration (Stirling 2011). The complexity of environmental issues, which are intractable, persistent and pose multi-dimensional problems, invites interdisciplinary approaches (Barry et al. 2008) and suggestions that integration of perspectives is acceptable for pragmatic reasons (Robson 2011). Despite the advocacy in various literature, however, the use of multiple perspectives presents issues of incommensurability of these approaches which affect the study, which are discussed in the next section.

2.4.2 Arguments against using multiple perspectives

There are different challenges to using multiple perspectives (Midgley et al. 2016):

1. Philosophical challenges, which are related to mixing theories informed by different paradigms, so they have different assumptions and therefore are incommensurable

2. Cultural challenges, which is the extent to which organizations, schools of thought or academic cultures militate against pluralism

3. Psychological challenges, the problem of overcoming resistance to learning new methods

Shove (2011) argues against the combination of individual behaviouristic and sociological approaches advocated by some academics (cf. Whitmarsh et al. 2011) on the ground of the philosophical challenges of these combinations.

Different epistemologies, theories of how things can be known (Robson 2011) and ontologies, theories about the fundamental entities of study (Ibid.) prevent integration of different disciplines and even of different theoretical perspectives (Blaikie 1991, Hammersley 2008, Jacobs and Frickel 2009, Stirling 2011, Turnheim et al. 2015, Geels et al. 2016, Graff 2016, Marshall and Rossman 2016). Barriers include incompatible styles of thought, research traditions, techniques and languages (Blaikie 1991, Jacobs and Frickel 2009, Geels et al. 2016). Integration is not possible therefore across different epistemological positions. Positivistic and constructivist approaches for example have different aims. Positivism looks for laws, whereas constructivism seeks understanding (Blaikie 1991). Thus, a combination of different theoretical perspectives is not legitimate even if these are not diverging.

The incommensurability of different perspectives (Blaikie 1991, Shove 2011, Stirling 2011) therefore raises the question of how to make sense of two sets of results originated by the research reported in this thesis. The next section draws on literature on interdisciplinarity to begin to address this question.

2.4.3 Interdisciplinarity

Interdisciplinarity is defined as "communication and collaboration between academic disciplines" (Jacobs and Frickel 2009, 44). Interdisciplinarity can be considered comparable to theoretical pluralism, because different disciplines carry with them different theories of knowledge (Miller et al. 2008). Although there is a specific discipline focusing on "interdisciplinary studies" (Jacobs and Frickel 2009, Graff 2016), there is no agreement on the legitimacy, risks and benefits of interdisciplinarity (Wall and Shankar 2008). Interdisciplinarity is "among the most talked about but most misunderstood topics" (Graff 2016, 775). In Physical Sciences (e.g. biology and chemistry), discipline integration is more frequent and less contentious than Social Sciences and generates combined fields such as Biochemistry (Graff 2016). In Social Sciences, this is not the case. Here, the relationship between disciplines is a "contentious" issue where there is contrast even between stated positions and behaviour of investigators, i.e. they may act differently to what they say, conducting "collective efforts to pursue research programs or projects for thought in the face of resistance to others" (Jacobs and Frickel 2009, 57). However, although

interdisciplinarity is not new (Graff 2016), mixed methods research studies are growing in numbers (Fielding 2012, Midgley et al. 2016). Different methods do not always imply different perspectives (Hammersley 2008), as Midgley's et al. (2016) concept of methodological pluralism shows. In fact, some mix the issue of integrating different perspectives with integrated methods (Rossman and Wilson 1994, Hammersley 2008).

2.4.3.1   Types of interdisciplinary studies

Literature suggests that there are different levels of "dialogue" between perspectives and disciplines, ranging from "light" dialogue with "one off" iterations to full integration based on iterative interaction and collaborative linkages (Turnheim et al. 2015). There are different types of interdisciplinarity ranging from (Wall and Shankar 2008, Jacobs and Frickel 2009):

- *Cross-disciplinarity* or *multi-disciplinarity*, i.e. a contribution from two or more fields to a research problem
- *Interdisciplinarity* or *pluri-disciplinarity*, integration of knowledge originating in two or more fields
- *Trans-disciplinarity*, where knowledge is produced jointly by disciplinary experts and social practitioners

This taxonomy is evidence of a continuum from low to high level of interconnectedness and intellectual integration (Jacobs and Frickel 2009). In cross or multi-disciplinary research, team members from different disciplines work in isolated self-contained manner, in parallel or sequentially (Wall and Shankar 2008). This can evolve by increasing the level of collaboration and communication and attempts to integrate findings, whilst transdisciplinary research is, in Wall and Shankar's (2008) thinking, the most integrated and organized with blurred boundaries between disciplines.

2.4.3.2   Objectives pursued by calling on diverse perspectives

Nonetheless, there has to be a rationale to employ different *methods* (even in parallel) as the epistemological assumptions of the methods being integrated need to be respected (Fielding 2012) and because of resource implications (Rossman and Wilson 1994). This rationale may include objectives the dialogue between methods aims to achieve. These objectives should be criteria for the

measurement of success and failure of that dialogue (Graff 2016). The objectives of the dialogue may include:

a) *Corroboration* (Rossman and Wilson 1994, Hammersley 2008) *or Convergent validation* (Fielding 2012), convergence is to confirm the findings of a method with the other or validation (Rossman and Wilson 1994). This is the most controversial objective as it is akin to triangulation, which Blaikie (1991) and Rossman and Wilson (1994) question, as findings from different perspectives are incompatible (Blaikie 1991).

b) *Elaboration* (Rossman and Wilson 1994) *or* indefinite triangulation, which is comparing different narratives of the same event and search for complementary information or enrichment (Hammersley 2008) or illustration and analytic density or "richness" (Fielding 2012, 129). Analytic density aims at getting a "deeper" picture from both angles to engender *richness* of information from multiple perspectives

c) *Development* (Rossman and Wilson 1994), to shape a perspective's method from the findings of another) and

d) *Initiation* (Ibid.), when results from one method foster new lines of thinking.

Different ontologies and epistemologies make the combination of methodologies and perspectives they underpin neither feasible nor legitimate (Blaikie 1991), therefore the only mediation possible between such perspectives is epistemological dialogue or juxtaposition, which aims to enrich knowledge *without* combining perspectives and methods (Hammersley 2008). This "enriches" the view of the problem without trying to validate or increase completeness. Researchers' adoption of different perspectives can contribute to their understanding, then to comparing notes with other researchers from different perspectives and achieving a deeper understanding reflexively by seeing different approaches to a problem (Stirling 2011).

Therefore, from what is seen here, it appears that, following Blaikie (1991) and others, findings from methods driven by CCT and PT cannot be integrated across different ontologies and epistemologies that underpin different research perspectives. All this indicates that a dialogical strategy, where there is a juxtaposition and dialogue through and from the findings is, in short, the only

safe route to compare findings generated by CCT and PT. The next section describes possible approaches to this.

2.4.4 Approaches to dialogue between perspectives

Scherer (1998) claims that the solution of the incommensurability problem comes from researchers espousing competing perspectives and engaging in a learning process which aims to achieve mutual understanding of each other's worldview. Midgley et al. (2016) claim that it is not possible to be "meta-paradigmatic", by which they mean to set up a "higher" paradigm which governs the two paradigms by setting up common assumptions. In their view, the way to pluralism involves setting up a new position and reinterpreting ideas from different paradigms in a "virtual" paradigm. A virtual paradigm is a "provisional" set of assumptions an individual researcher or group of researchers can set up to interpret reality and ideas from other paradigms (Ibid.). Different types of "bridging", the "sequential and interactive articulation of different approaches", can conduct a structured dialogue between incompatible perspectives operationalized in a pluralist way (Geels et al. 2016,576). Following Jacobs and Frickel (2009) and Wall and Shankar (2008), this may be considered a cross-disciplinary approach. Turnheim et al. (2015) propose three steps that lead to that dialogue between different perspectives, consisting of stages of *alignment, bridging* and *iteration* (Turnheim et al. 2015, Geels et al. 2016). Alignment consists of the identification of joint elements around which perspectives can be articulated in terms of shared problem frames. Some paradigms are very far in their assumptions but some partially overlap and in some cases even complement one another (Knudsen 2007), which may facilitate dialogue. Bridging is about building active operational links between approaches around data and explanation in a common strand of analysis based on different kinds of information. Iteration is the repetition of these steps on cyclical basis, "flitting" between approaches, so that the interpretation of one changes with the other, in line with Rossman and Wilson (1994).

2.5 Conclusions from literature review

This chapter discussed the research conducted to date by PSS researchers on PSS consumption and possible perspectives to study PSS consumption. The review showed that, although research explored this topic, most research

involving PSS has dealt with demonstrative or small-scale projects rather than established PSS. The review identified a research gap, a dearth of research drawing on consumer studies perspectives. Two studies proposed the use of Consumer Culture Theory (Bardhi and Eckhardt 2012) and Practice Theory (Mylan 2015) to explore consumers' relationships with PSS offerings. This chapter explored how research could draw on CCT and PT to explore different aspects of the relationship of consumers with PSS.

CCT has been useful to explore PSS-like solutions in the automobility context (Bardhi and Eckhardt 2012) but has not dealt with PSS explicitly. Mylan's (2015) study focused on washing and lighting practices, which featured ordinary products but not PSS offerings. Furthermore, that study overlooked the role of consumers' choice during acquisition as PT looks at routine, undeliberated behaviour and not at what happens in the head of consumers (Swidler 2001). This has implications for research, as the way human subjects access products, which is not considered by Mylan (2015), is a key feature of PSS. Importantly Mylan did not investigate consumers' practices directly, relying instead on interviewing business managers. The application of these two constructivist perspectives in a variety of contexts is novel in the PSS field and is likely to generate useful insights on PSS consumption.

Since CCT and PT focus respectively on consumer choice and practices, they can be linked to a current debate on whether social structural approaches such as PT are more useful to research sustainable consumption (Shove 2010) than perspectives that focus on consumer choice (Whitmarsh et al. 2011) such as CCT. By focusing on individual consumers, CCT can help explore the value individual consumers seek to extract from PSS. Consumers might want functional, symbolic and hedonic value and research can draw on CCT to explore how consumers may obtain such value from PSS consumption. For example, in constructing and defining their identities through PSS consumption (cf. Belk 2014b) consumers can develop affiliation with brands and brand communities associated with PSS offerings. This may reveal what types of consumers may be willing to try PSS offerings. PT may help explore reasons for failure to perform proto-practices supported by PSS offerings by human subjects who seem favourable in principle. These reasons could include for example social conventions and socio-technical aspects and competences human subjects need to acquire (cf. Shove et al. 2012) to perform everyday life practices with

materials accessed through PSS instead of those they own. PT could also identify links that need to be established within and between practices in order for proto-practices to gain stability.

Through these two comparable but separate research approaches, looking at individual consumers and social practices in parallel, research may offer a view of what PSS offerings may be or not viable.   The analysis needs to apply the two approaches in a pluralistic fashion because they are incommensurable. Research informed by different perspectives is better carried out separately by different researchers (Wall and Shankar 2008, Marshall and Rossman 2016), teams of researchers (Stirling 2011) or sequentially by a single researcher (Blaikie 1991, Fielding 2012). The latter is the only option available in this study. The application of CCT and PT in a pluralistic fashion following Stirling (2007, 2011) to investigate consumers' relationship with PSS informs the following research aim and objectives:

2.6 Aim

To explore and describe the social and cultural dynamics that shape Product Service Systems consumption

2.7 Objectives

The following objectives are justified and informed by Consumer Culture Theory and Practice Theory (cf. Midgley 2011) in a pluralistic way as explained in 2.4.2. The objectives and justifying narrative are as follows:

Sections 2.1.1 to 2.1.3 identified a gap for approaches to study social and cultural aspects of PSS consumption, in particular to reveal insights on PSS consumption processes rather than snapshot views of PSS consumption. The substantive and supporting literature review has discussed a debate on approaches to study sustainable consumption which centred on a juxtaposition of individualistic and social-structural approaches. The literature review thus discussed the opportunity of drawing insights on PSS consumption using CCT and PT. This opportunity needs further investigation and the PhD program aims to do this by testing these two perspectives as theoretical frameworks for the

thesis. The data generated need separate analyses because CCT and PT are incommensurable (cf. Blaikie 1991, Shove 2011). Hammersley (2008) recommends a dialogical strategy to make sense of disparate sets of results based on incommensurable perspectives. In order to generate a coherent narrative it is necessary to identify a strategy to draw insights on the two sets of results generated by the two separate analyses. This requirement calls for primary expert input in addition to secondary literature review and informs the following objective:

> i. *To identify approaches to study the social and cultural aspects of Product Service System consumption.*

Consumers associate meanings and ideologies with consumption of products, services and brands (Richins 1994b, Kozinets and Handelman 2004). These meanings and ideologies are used by consumers to co-construct their identities using marketers' generated materials (Belk 1988), including materials accessed for use (Belk 2014b). For example, meanings and ideologies connected with "political consumerism" and including "environmental protection" (cf. Bardhi and Eckhardt 2012) and "anti-consumerism" (Kozinets and Handelman 2004) might help consumers identify with PSS. In contrast, meanings such as materialism (cf. Belk 1985, Richins 1994b, Ger and Belk 1996a) and possibly "health and safety" and "independence" might be consistent with a consumer identity which is incompatible with PSS. Understanding how consumers can co-construct their identities through PSS consumption helps establish whether they can identify with products accessed through PSS. These considerations inform objective ii:

> ii. *To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction.*

Consumers need to extract value from consumption (Arnould and Thompson 2005, 2007, Arnould 2013). Gaining value is the reason why consumers consume (Sheth et al. 1991). The value required by consumers can be functional, symbolic and hedonic (Richins 1994a, Graeber 2001). The relationship between functional and symbolic value is complex. Even if consumers can identify with the meanings and ideologies that are associated with PSS, they will not take these offerings up unless they deliver what they require, i.e. functional, hedonic and symbolic value (Scholl 2008, Babin and James 2010). The meanings and ideologies associated with a PSS offering can

create an interest in consumers who may consider it. However, consumers might not convert this interest into repeated consumption of the PSS offering if this does not satisfy their requirement for value. Once unearthed how consumers can identify with PSS offerings it is necessary therefore to understand the value they can extract from them to explore PSS consumption. These considerations inform objective iii.

iii.   *To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings.*

Consumers however may be willing to make sacrifices to consume sustainably (Craig-Lees and Hill 2002) because of ideologies associated with environmental protection (Moisander and Pesonen 2002). PSS consumption may involve such sacrifices as well as amenability and ability to perform efforts to co-create value (Bardhi and Eckhardt 2012). Consumers for example may be willing to reduce the number of possessions if they are nomadic and have liquid relationships with possessions (Bardhi et al. 2012) or for ideological reasons (Etzioni 1998, Craig-Lees and Hill 2002). They may also have constructed identities that make them more likely to engage in sustainable consumption (Moisander and Pesonen 2002), for example, they may be younger. In short, consumers' identities may mediate the disparity between the interest consumers may have in the social, cultural and symbolic value of PSS offerings and the functional value they ultimately require of them, as consumers may require different types of value or forgo some of this value. Mediation can be conceptualized as intervening aspects that can influence the outcome of a process (Bate et al. 2012), such as consumer identities and context characteristics which, crucially, can be researched with qualitative methods (Ibid.). This literature therefore informs the following objective:

iv.   *To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption*

According to Mylan (2015), PSS consumption is shaped by the dynamics of practices performed with PSS offerings, the tightness of the links between the elements of the practice and the links between that practice and other practices. Although consumers might be interested in sustainable consumption, they may not have the ability and freedom to consume PSS offerings because of social-structural aspects such as social conventions (Warde 2005, Shove 2010),

physical aspects and infrastructure (Watson 2012). The proto-practice (Shove et al. 2012) performed with the PSS needs to be performed recurrently, collectively and acquire socio-materiality to become an established practice (Schatzki 2010). Understanding is necessary of the links between elements within focal practices and links between these and other practices to appreciate whether and how these focal practices can evolve to integrate PSS offerings. This literature therefore informs objective v:

> v. *To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption*

Having concluded this chapter by proposing a research aim and objectives to guide the exploration of PSS consumption, the next chapter describes the methods used to explore consumers' relationship with PSS drawing on CCT and PT.

3 Methods

3.1 Introduction

In Chapter 2, a review of the literature on PSS consumption suggested that little research was conducted on PSS consumption to date. Two possible research perspectives, Consumer Culture Theory (CCT) and Practice Theory (PT) to research PSS consumption were proposed and described. The application of CCT and PT by Bardhi and Eckhardt (2012) and Mylan (2015) respectively have produced promising results in drawing insights on PSS consumption even when bearing in mind the limitations of each. CCT was not expressly applied to PSS. In turn, PT has not been applied to real PSS exemplars as Mylan (2015) has merely demonstrated the utility of PT on non-PSS cases and has not investigated consumers directly. Using CCT and PT separately and juxtaposing the results offers opportunity to explore PSS consumption processes fully. The questions that can be addressed are for a thorough exploration of the meanings that PSS is associated with, the competences required (or not) of consumers and the relationship of consumers with materials used as part of a PSS (the "product" element of PSS). These relationships with meanings also enable exploration of the relationship of PSS with consumer identities and the nature of the value that consumers can extract from PSS. The research aim and objectives of the study were presented in Chapter 2. This chapter starts from revisiting those objectives and outlines and justifies the research design of the study and its application.

3.2 Revisiting research aim and objectives

In chapter 2, sections 2.6 and 2.7, the aim and objectives were presented that were informed by the literature review, CCT and PT presented in section 3.1. The research aim is as follows:

> *To explore and describe the social and cultural dynamics that shape Product Service Systems consumption*

This aim was broken down in the following research objectives as justified in section 2.7:

i. *To identify approaches to study the social and cultural aspects of Product Service System consumption*

ii. *To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction*

iii. *To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings.*

iv. *To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption*

v. *To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption*

3.3 Research Design

Anasta and MacDonald (1994) distinguish types of research into fixed and flexible research design. Robson (2011) also describes mixed research design, which combines fixed and flexible stages. For example, a study on consumer behaviour can have a stage which is flexible and characterized by exploration using qualitative methods and another which is fixed, explanatory and relies on quantitative methods (Kalafatis et al. 1999).

In fixed research design, "the design of the study is fixed before the main stage of data collection takes place" (Robson 2011,81), i.e. the design is tightly specified from the beginning, for example decisions on methods, sampling strategies and data analysis are set out at the outset (Ibid.). A fixed research design may follow a hypothetical-deductive logic, a way to put theories to the test in a way for them to be disproved and where a hypothesis is set to be falsified (cf. Popper 1959). This logic is informed by theoretical assumptions, i.e. the hypotheses. Fixed research design, justified by the availability of a well-developed theory to investigate the phenomena of interest, often uses quantitative methods of analysis (Robson 2011).

In contrast, a flexible research design is followed when theory is underdeveloped (Ibid.). This type of design is based on approaches which "show substantial flexibility in their research design, typically anticipating that the design will emerge and develop during data collection" (Ibid., 131). With this approach, aspects such as methods and data analysis may be revisited during the process

(Ibid.). For example, the research questions, methods and finer details such as questions asked in interviews or other data collecting tools can be revisited.

Flexible designs may follow a logic of *induction*, the process of drawing inferences from observations in order to arrive at a general theory (Stainton-Rogers 2006). Induction is an exploratory stance to research which does not begin with hypotheses or structured research propositions (Silverman 2003), it can discount theory for an unexplored subject such as in grounded theory (Glaser and Strauss 1999) or it can be guided by theoretical perspectives (Silverman 2003). An alternative logic for flexible design is *abduction*, the "reasoning from the experience to the case" (Shank 1998, 847), which uses some hypothetical rule or claim to make a unique observation into a typical example of a general phenomenon (Ibid.). Abduction is somewhat informed by formal theory or tacit knowledge (Dubois and Gadde 2002). Theory might drive research questions, however Formal hypotheses are not set (Shank 1998) and therefore research propositions that guide the research can change during the process, in line with flexible design. Flexible design research is often based on qualitative data and methods (Robson 2011).

Because of the novelty of the application of CCT and PT to study PSS consumption and for their own nature as explained in chapter 2.2.1 and 2.2.2, the research was organized around a flexible research design. CCT and PT are well established and developed theories, so they can usefully inform research questions around the key elements of these theories and research design (cf. Dubois and Gadde 2002). In flexible research designs, knowledge emerges as the research progresses and all aspects are revisited during the process, including research questions (Ibid.). Research design (e.g. methods) changed as the study progressed and new findings informed understanding and helped refine the research aim and objectives. The planned research reported in this thesis initially relied on interviews and observation because of theoretical considerations; however, these had to be amended during the research. As such, the researcher switched back and forward between abduction and induction during the analysis as new themes emerged that were not reflected in the literature.

In summary, the research followed a flexible research design and followed an inductive and abductive logic. As seen in chapter 2, section 2.3.1, these logics

and design are followed by both CCT and PT. The next sections outline research purposes and development of research perspective.

3.3.1 Research Purposes

Research can have descriptive, exploratory or explanatory purposes (Robson 2011), as well as action, change and emancipatory purposes (Marshall and Rossman 2016). Explanatory research aims to answer "why" questions, to explain why a phenomenon takes place, with focus on causal relationships, i.e. what causes what. Descriptive research aims to answer "how", "what", "who", where and "when"" questions (Knight 2002, 9-10), i.e. what takes place and how. Exploratory research aims to answer "what" and "how" questions (Robson 2011, Marshall and Rossman 2016), i.e. explore what phenomena take place, in what way, without seeking causes. The research objectives corresponding to these questions then drive methods, sampling strategies and approaches to data analysis. For example, exploratory research generally calls for qualitative methods (Robson 2011). The novel application of CCT and PT and the little knowledge on PSS consumption call for exploratory and descriptive research. This can be addressed by a qualitative approach (Ibid.), which as stated in section 3.3 is also justified when theory is underdeveloped.

3.3.2 Developing a theoretical framework to research PSS consumption

Chapter 2 reviewed the theoretical approaches that were adopted in the examples of research on PSS documented in the literature. The "funnel" metaphor used in the context of qualitative research by Hammersley and Atkinson (2007) and Marshall and Rossman (2016) to represent the development process of inquiry may help represent the development of the conceptual framework in the researcher's own research. Figure 3-1 below is a visual representation of the funnel.
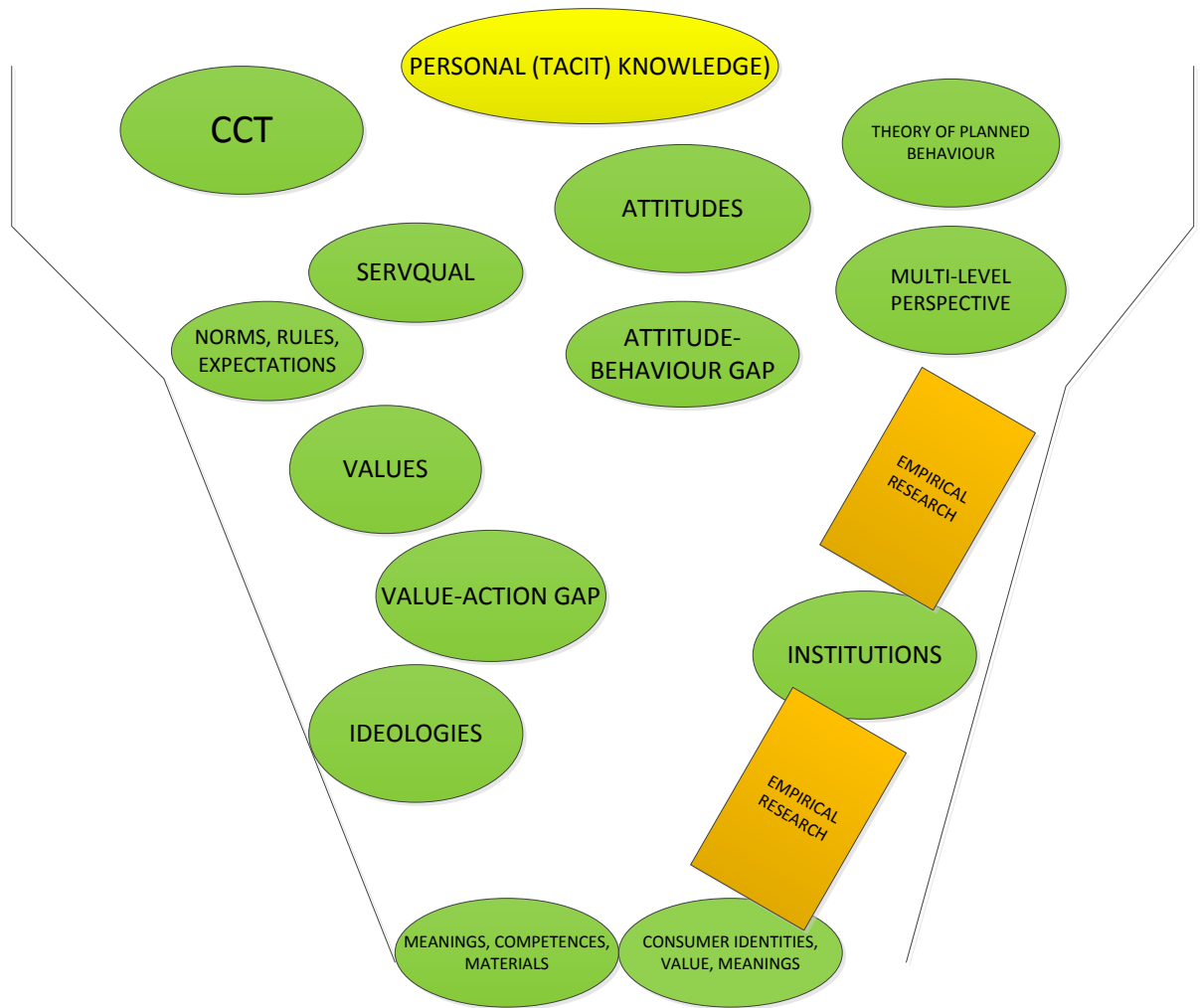
Figure 3-1 The research funnel

The metaphor is useful to describe the progressive development of the research focus over the course of the study with a progressive *clarification* and *delimitation* of the scope (Hammersley and Atkinson 2007). Delimitation means setting the boundaries of the research and therefore excluding aspects from the analytical framework. The funnel metaphor describes the way in which a researcher may progressively exclude aspects of the problem from the framework and refine the questions. This occurs "over time", "well into the process of inquiry" (Hammersley and Atkinson 2007, 164) through a process of reflexivity and reflection of the researcher (Hammersley and Atkinson 2007). Reflexivity is important in research (Broadbent and Laughlin 1997) and occurs because of discussion with co-researchers, including supervisors (Vanstone et al. 2013) and research participants or as part of training. Research partners influence the research work through reflexive processes, including the evolving theoretical framework (Broadbent and Laughlin 1997). The theoretical framework evolves in the research process because of thinking informed by formal and tacit theory and empirical work and reflexivity (Ibid.).

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In the researcher's case, personal (tacit) knowledge of consumer behaviour and marketing initially guided the research. Having identified a gap in the research on PSS consumption, the researcher initially explored the usefulness of attitudes, behavioural theories such as Ajzen's (1991) *Theory of Planned Behaviour* (TPB) and service marketing theories such as Parasuraman's et al. (1991) SERVQUAL, the latter considered as a result of own research (Catulli 2012). It was by thinking of values, norms, rules and expectations that the researcher started considering *Consumer Culture Theory* (CCT).

The "value" construct emerged early in the analysis of the substantive literature, as PSS researchers limited their attention to functional value as seen in chapter 2. Because of reflexivity induced by the PhD training and the Supervisors' input the researcher considered the *Multi-Level Perspective* (cf. Geels 2002). This was soon discarded, as it focuses on the technological "macro" aspects of socio-technical transitions and lacks insight on agency necessary to study PSS consumption.

When exploring concepts to investigate consumers' relationship with PSS, the researcher initially explored the theory of values. Others followed this direction (cf. Piscicelli et al. 2015). Values however were found to present two limitations:

1. the way values were historically researched, informed by a positivistic approach, e.g. see Rokeach (1979), Schwartz (1992), Inglehart (1995), although CCT offers a constructivist perspective on values, e.g. Thompson and Troester (2002).
2. The value-action gap (cf. Blake 1999, Shove 2010), explained in Chapter 2. This phenomenon limits the utility of values in the research. In making this evaluation, Shove's (2010, 2011) and Whitmarsh's et al. (2011) work was particularly helpful and for similar reasons attitudes were excluded in consideration of the attitude-behaviour gap (cf. Kalafatis et al. 1999).

The phenomena of analysis therefore were restricted to value, meanings, materials and competences. The meanings construct in CCT includes values and market place ideologies (Arnould and Thompson 2005). Because of reflection on empirical data, the researcher then considered the usefulness of institutions. A definition of institutions is "socially shared rules, norms and habits that coordinate actions of individuals and groups" (Ostrom 2005, 3). These are mentioned or implied by Pantzar and Shove (2010), Shove (2012) and Warde

(2005). Tuomela (2003) theorizes a role of institutions in shaping practices and separates practices from institutions. Some, e.g. Schatzki (1996) see practices and institutions as equivalent and acting on the same level.

Institutions however were deemed problematic because their inclusion in the theoretical framework entailed consideration of additional extensive literature, e.g. Institutional Economics (North 1990, Hodgson 2006). The role of institutions in shaping practices is relatively unexplored, Tuomela (2003), a philosopher and Onuf (2013), a political scientist, being isolated sources. Attendance by the researcher to conferences and discussion with peers highlighted areas of institutional theory and economics the researcher was not aware of, which made it difficult at the time to estimate the theoretical work required.

In short, the researcher's "funnelling" describing the process to generate a research perspective was shaped by a combination of initial tacit and formal knowledge especially in marketing, reflexivity following training (including Supervisors' input) and conferences and conversations with colleagues and empirical data which questioned appropriateness of theories. The researcher selected a Sociology of Consumption perspective, focusing on CCT and PT, described in sections 2.2.1 and 2.2.4. In the course of the initial theoretical work, the research identified two key papers that could inform an analytical framework for the study. The first is Bardhi and Eckhardt's (2012) study on Access Base Consumption (ABC), which reached conclusions that are useful for the analysis of consumers' relationship in particular with use orientated PSS; the other is Mylan's (2015) conceptual paper which proposes the application of PT to the study of PSS consumption. These two studies drove the design of the analytical frameworks explicated in sections 3.5.2.1 and 3.5.3.2, which were used to guide the interpretation of the data. The next section describes and justifies the research strategy adopted.

3.3.3 Research strategy

Several alternative research strategies were considered, including survey, action research, case study, ethnography and grounded theory (Robson 2011, Marshall and Rossman 2016). A survey is a quantitative study which aims to obtain information from a population or a representative sample of it (Bell

2010). Bell (2010) claims that there is some consensus amongst researchers that surveys are capable to describe and compare characteristics and opinions of participants and to be representative of a population. Surveys are also relatively cheap and speedy to run (Silverman 2003). The disadvantage of the survey method is that it yields decontextualized data (Robson 2011) and thus surveys are not suitable when it is necessary to obtain rich data and explore the sense-making of people in specific contexts (Silverman 2003). Surveys also suffer from "social desirability" bias (when participants give the answers they guess researchers want to hear) (Robson 2011) and the results are undermined by the attitude-behaviour gap (Kalafatis et al. 1999, Shove 2010).

Action research (AR) is "an activity studying social systems by changing them" (Heale 2003, 4). It is an emancipatory, constructivist (Hilsen 2006, Robson 2011) approach to research which consists of implementing a project with the aim of testing changes in practices and evaluate the effects (Robson 2011). AR has the advantage of testing change, such as innovations, in a real world context (Argyris and Schön 1989). It allows for the use of a range of diverse methods and data sources (Heale 2003, George and Bennett 2005), similarly to case study (Robson 2011). Disadvantages include an a-theoretical posture, issues of independence in research design and position of the researcher (Robson 2002). The distinction between researchers and participants may be blurred (Marshall and Rossman 2016), which may make it difficult to manage.

Ethnography aims to study human groups to understand the cultural elements that drive their actions (Ibid.) and generates "thick description" (Robson 2011). Whilst there are advantages in achieving an understanding of culture, this strategy requires prolonged full immersion in that culture, for periods "of the order of two or more years" (Ibid., 144) with problems of objectivity ("going native"). Ethnography is not a realistic or practical approach when seeking interaction with consumers in different contexts, both because of time limitations (Ibid.) and the difficulties in creating the necessary trust (Marshall and Rossman 2016).

Grounded theory (GT) is an approach to research starting from collecting data "on the ground", prior to deriving theoretical insights (Ibid.), "working backward (...) from data into theory" (Ibid., 146). The advantage of GT is that it allows to deal with situations where existing theories are insufficient (Robson 2011) and it is suitable to help carry out AR studies (Ibid.). Amongst the disadvantages,

Robson (2011) lists the difficulties to conduct research studies without pre-existing theoretical assumptions and practical issues with data interpretation. It may be argued that a major limitation of GT, especially when used in conjunction with an AR study, is the risk of "rediscovering the wheel", formulate theory which is already known.

A case study research strategy is "an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin 1994,13). A case can be a contemporary event, a decision, individual (e.g. studies of psychopathology), organization, process, program, neighbourhood or institution (Ibid.).

Case study is an "all-encompassing research strategy" where the research design allows for flexibility of data collection from multiple sources and multiple methods of data collection and analysis. Case studies are used to analyse phenomena which cannot be easily separated from their context (Yin 1994, George and Bennett 2005, Robson 2011). Case studies rely on systematic observation of events and interviews and the analysis can draw on documents and artefacts (Yin 1994). Case studies can be exploratory, descriptive and explanatory (Ibid.). Generally, a case study strategy is pursued in exploratory or descriptive research focused on a contemporary set of events over which the investigator has little or no control. Case study relies necessarily on prior theoretical propositions to guide design, data collection and analysis (Ibid.). A case study is the unit of analysis but can have further units (or subunits) of analysis embedded within (each of them being "cases" (Ibid.). The same case study may include more than one unit of analysis (Ibid). Single case studies do not probe transferability to other cases with implications for trustworthiness (Gibbert et al. 2008); they are acceptable, however, when they are critical, revelatory, extreme or unique cases or when they are used to confirm a theory (Yin 1994).

3.3.4 Research strategy selected

The research strategy selected to investigate PSS consumption is case study, because this strategy enables research in specific contexts (George and Bennett 2005) as required by CCT and PT (Arnould and Thompson 2005, 2007, Shove et al. 2012, Mylan 2015). Case study can help address the situated complexity

of uptake of new practices and innovative consumption (Spaargaren, 2011; Shove, 2010). Case studies also afford both credibility and flexibility to operationalize multiple perspectives (Marshall and Rossman 2016). They offer advantages in addressing qualitative aspects, individual actors, historical and social contexts, practices and path dependencies. Finally, case studies are useful for theory development (George and Bennett 2005).

The strategy for this research is built on two case studies, *Re-engineering Business for Sustainability (REBUS)*, a Government funded action research project which established a pilot PSS based on infant care products including strollers and infant car seats; and *e-carclub*, a pre-existing project which is a car sharing system funded by the *National Energy Foundation* and *Sustainable Venture* (e-carclub.co.uk 2015). The Europcar group acquired a majority share in e-carclub in 2015 (Ibid.).

Consistent with case study strategy, multiple methods were used to collect and analyse data collected from multiple sources (Yin 1994, George and Bennett 2005, Robson 2011). This thesis draws on both secondary data collected from academic and design literature and market reports and qualitative primary data generated by interviews.

Yin (1994) claims that case studies need to satisfy *construct validity*, when data measure what the researcher thinks they should measure, *internal validity*, when causal relationships between data can be established *and external validity*, when the applicability of these causal relationships can be demonstrated outside the context of the research (Robson 2011). "Validity is another word for truth" or "the extent to which an account accurately represents the social phenomena to which it refers" (Silverman 2003,175). Yin (1994) also stresses the importance of *reliability*. Reliability is "the degree of consistency with which instances are assigned to the same category by different observers or the same observer on different occasions" (Ibid. 175). More specifically to qualitative research, Silverman (2003) confirms the relevance of validity and reliability. These claims are problematic however because there is no consensus on whether these criteria are relevant at all to qualitative research (Mays and Pope 2000, Silverman 2003, Kitto et al. 2008, Robson 2011, Marshall and Rossman 2016), because they are concepts linked to measurement (Blaikie 1991, Hammersley 2008) and therefore to quantitative research methods. Different research paradigms make the claims more problematic (Leung 2015), although

Seale (1999) suggests that paradigmatic debates should not hamper research as a "craft". Alternative quality criteria have been proposed for qualitative research. These are:

- *fairness* (reflecting the views of diverse participants);
- *reflexivity* (the researcher's awareness of his or her possible position and possible prejudices);
- *attention to ethical issues* (Lincoln 1995);
- *credibility* (through checking how faithfully participants' statements are reported);
- *transferability,* the extent to which findings from a qualitative study relate to another study (Kitto et al. 2008);
- *dependability*, a replacement for consistency and
- *plausibility* and *relevance* or consistency with what is currently accepted in the relevant research community (Seale 1999).

Seale (1999) suggests that transferability should replace external validity in qualitative studies. According to Yin (1994), multiple case studies offer the advantage of making it easier to test external validity, however this is not relevant to the present study, which is constructivist and uses qualitative methods. However, there is evidence that transferability documents research quality (Leung 2015). Thus, a view can be taken that multiple cases improve robustness because of offering opportunities to test transferability (Kitto et al. 2008). In this study, the two case studies of REBUS and e-carclub offer opportunities to test transferability through replication logic (cf. Yin 1994)

The two case studies selected offer two research contexts, one being parent - infant mobility, where parents transport infants using specialist equipment such as infant car seats and strollers accessed for use through a use orientated PSS. The other research context, urban personal mobility, features an electric vehicle (EV) use orientated PSS. The Re-engineering Business for Sustainability (REBUS) case study is based on a research project supported by the UK *Department of Environment, Food and Rural Affairs* (DEFRA), project No. ABR112. The objective of the project was to explore and develop ways to help people extend the useful life of products. This was done by establishing a pilot PSS based on infant care products, including strollers and car seats, to explore the relationship of providers and parents with PSS offerings. The study explored the opinions of business leaders and consumers, assessing the environmental

performance through Life Cycle Analysis and evaluating business and financial viability of PSS through collaborative partners' workshops. The pilot was implemented in market like conditions, in collaboration between the *University of Hertfordshire*, *Dorel* UK Ltd (manufacturer of *Maxi Cosi* infant car seats and various brands of strollers) and the *National Childbirth Trust* (NCT), a parental charity based in the UK. A product refurbishing operation was set up in a workshop in Bury St. Edmunds belonging to Dorel. At the end of a cycle of use, defined by the PSS hire interval, products would be collected from users and refurbished and then be re-issued to another family.

The author of this thesis was the Principal Investigator for the REBUS project, which provided a case study and access to participants and an opportunity to collect data for this research on the consumption of use orientated PSS. This study thus accessed participants in the REBUS project to explore specific theory-driven questions with respect to PSS consumption. So while the REBUS project provided access to PSS consumers (and PSS non-consumers), interviews and data collection were specifically conducted for the PhD, i.e. separate and distinct data were collected for the PhD project.

The parent-infant mobility context featured one main innovation, PSS as the mode of access to existing types of products, infant car seats and strollers that are already available in the market. In addition, however, access featured also a relatively innovative method of ordering the product for rent, as this was only possible through the web site of a parental charity, the National Child Trust (NCT), whilst parents traditionally acquire this product through retail outlets.

The research context for the second case study was urban personal automobility provided by e-carclub, an electric car club (www.e-carclub.org). The context of personal automobility was selected as it was one of the most critical consumption domains from the environmental sustainability standpoint (Tukker et al. 2010), because cars (and other motorized vehicles) are major sources of pollution (Potter et al. 2011). The analysis of the second case takes into consideration the results and conclusions of the previous REBUS case study as this can allow assessing transferability of findings (cf. George and Bennett 2005).

The second case study featured two innovations rolled into one which involved two interrelated sets of skills: driving an electric vehicle (EV) and accessing EVs for use through a PSS. Consumption of the EV PSS required users to learn

several activities that are not typical of traditional automobility: driving EVs required learning battery charging and journey planning (because of vehicles' limited range and need to locate charging stations). Journey planning is a skill which is relevant to both electric cars and PSS. Both innovations are associated with meanings, for example environmental protection. PSS may be associated with freedom from the responsibilities of ownership. The researcher's investigation therefore focuses on two innovations.

Case study strategy of course has limitations that are relevant when qualitative methods with constructivist perspectives are used. First, there are difficulties in selecting and accessing the appropriate case relevant to the contemporary situation of interest (Stuart et al. 2002); in the researchers' case, much work was necessary to access both the REBUS and the e-carclub cases. It is then a laborious process, with time needed both to set up interviews with participants and to build the necessary trust (Ibid.). This is an important requirement because qualitative research is relational and requires skill and ability to achieve the right open communication to reflect the "voice" of the participant and there are risks of failure in achieving this (Lincoln 1995). Once the data are collected the volume to process is another problem (Barnes 2001b), a "challenge of making sense of chaos" (Stuart et al. 2002, 427). There is then the challenge of data interpretation (Meredith 1998), with difficulties of making sense of it and risk of bias (Barnes 2001b). Case studies based on qualitative methods therefore present challenges in achieving quality and satisfying criteria of credibility, fairness and transferability. Issues of quality are dealt with in 3.3.8. In summary, the researcher opted for the flexibility of case study strategy to accommodate multiple perspectives, methods and sources of data (cf. Yin 1994, George and Bennett 2005, Robson 2011, Marshall and Rossman 2016).

3.3.5 Data Collection

Generally, two types of data can be collected: qualitative and quantitative. Qualitative data, collected on small scale in a context, is presented in words and focuses on meaning (Robson 2011). Quantitative data, often decontextualized and in numerical form, focuses on behaviour. Statistical analysis is conducted to test generalizability (Ibid.). This study collected *qualitative* data to describe detailed (cf. Marshall and Rossman 2016) *aspects* and *meanings* of PSS

consumption in line with CCT and PT (cf. Bengtsson and Ostberg 2006, Bueger 2014). As explained in the previous section, case studies allow for collecting diverse data both of secondary and primary nature. The data collection within the case studies was organized in two parallel stages:

CCT Stage

This aimed at collecting qualitative data, which described

- The meanings of the activities investigated – how do participants make sense of these?
- The ideologies that inform the decision to consume PSS – or not
- The value that users extract from infant mobility and personal mobility PSS

PT Stage

This aimed at collecting qualitative data, which described

- The elements of the practice as they relate with parents, i.e. what sense participants make of the meanings, competences and materials
- How the elements of the focal practices (driving electric cars on access and transporting infants with rented strollers and car seats) are linked together
- How the focal practice is linked with other practices, e.g. shopping, socialising, going to work, etc.

Table 3-1 and 3-2 below summarize the data collection activity across the two case studies

	CCT	PT
Type of data: secondary	Meanings and ideologies associated with use of infant care products. Communications by medical authorities, learning association (e.g. NCT, Mumsnet) and trade associations and commercial organizations with consumers and other market entities	Practices and conventions associated with infant mobility. Meanings, materials and competences associated with transporting infants using infant products
Type of data: primary	qualitative narrative by parents on their identity construction	qualitative narrative of the focal practice and practices associated with it
Data collection methods	32 in depth qualitative semi-structured interviews (Cf. Bardhi and Eckhardt 2012).	• 32 semi-structured interviews on the practice of transporting infants safely and comfortably and other practices linking with that practice (cf. Mylan 2015).

Table 3-1 Data collection – REBUS

	CCT	PT
Type of data: secondary	Meanings and ideologies associated with use of personal and rented vehicles. Communications by Government, social pressure groups, the media, trade associations and commercial organizations with consumers and other market entities	Practices and conventions associated with driving both "traditional" and electric cars. Meanings, materials and competences associated with driving "traditional" and electric cars
Type of data: primary	qualitative narrative by drivers on their identity construction	qualitative narrative of the focal practice and practices associated with it
Data collection methods	Fourteen in depth qualitative semi-structured interviews (cf. Bardhi and Eckhardt 2012).	• Three observations including: Passenger travel with a driver (observation) Targeted questions asked before and after drive • six semi-structured interviews asking questions on practice of driving e-car EVs and other practices linking with that practice (cf. Mylan (2015).

Table 3-2 Data collection - e-carclub

The use of qualitative methods is in line with the methods used in research informed by both CCT and PT. Rich data are required to explore and explicate the complex themes associated with meanings and competences relevant to participants in line with a constructivist approach. The next section justifies the types of interviews used.

3.3.5.1   Types of interview

To collect the qualitative data needed for this research, an appropriate type of interview needed to be selected. In-depth interviews are used to collect qualitative data. Amongst the various categories of in-depth interviews, Marshall and Rossman (2016) list generic in depth interviews including informal, topical

or standardized and more specialist interviews such as *ethnographic, phenomenological and focus* (group).

- Generic in depth are useful to explore themes of interest and topical interviews or interview guides are helpful to explore topics of common interest of interviewer and participant (Marshall and Rossman 2016).
- Ethnographic questions are used to elicit participants' cultural knowledge, including categories of meanings (Ibid.).
- Phenomenological interviews focus on lived past and present experiences and how they develop a worldview and focus on individuals (Ibid.).
- Focus or focused, interviews aim at investigating a particular situation, phenomenon or event and the involvement of the participants (Robson 2011).
- Elite interviews are interviews with leaders or experts in a community, usually in powerful positions (Brinkmann and Kvale 2015).

The topical type of interview was selected, as this can elicit data on topics such as elements of practices, meanings and ideologies (cf. Marshall and Rossman 2016).

Interviews can be *structured, semi-structured* and *unstructured* (Robson 2011), varying in their degree of depth, with unstructured interviews eliciting more in-depth output (Robson 2011, Marshall and Rossman 2016). In practice, interviews are situated on a continuum between much unstructured and totally structured, with a balance between total freedom for participants to express their views and a level of standardization to allow specific themes to be probed across a sample of participants (Robson 2011). Interviews operationalizing both CCT and PT need to have some level of standardization, as they need to be driven by the respective conceptual frameworks. Interview guides need to operationalize a "shopping list of topics" across the researcher's participants (cf. Ibid. 285). Interview guides informed by Bardhi and Eckhardt's (2012) framework include as topics elements such as value and identity. Interview guides informed by Mylan's (2015) framework include for example elements of practices such as meanings, competences and materials. The interview guides are shown in 3.3.5.3.

Three expert interviews and one focus group of experts were also conducted to inform a decision on how to perform a dialogue between two separate sets of results generated by CCT and PT. According to Brinkmann and Kvale (2015)

expert interviews can be considered qualitative elite interviews. Expert interviews aim at drawing together the opinions and thoughts of experts (Ibid.). Focus groups involve a discussion focused on a specific topic and include people who share certain characteristics (Krueger and Casey 2009). In this program's case, the topic of focus was whether and how insights from CCT and PT could be compared. The shared characteristics of participants were the status of academic experts. It is very important that the interviewer / focus group moderator in these cases has an excellent knowledge of the topic, including its terminology, in order to gain the respect of the interviewees (Brinkmann and Kvale 2015) and of course to be able to ask the right questions and understand the data. It is therefore appropriate that these interviews were conducted in the final stages of this research. In Brinkmann and Kvale's (2015) view interviews generate knowledge which can be both doxastic (from "doxa" or common belief) or beliefs of participants and epistemic (from "episteme" or valid knowledge). In the case of expert interviews, the nature of knowledge generated is more epistemic, i.e. abstract knowledge of the subject and therefore requires less interpretation by the interviewer.

3.3.5.2   Observation

Phenomena, including human actions, can be directly observed in a research context (Robson 2011). A researcher can be a participant or a non-participant observer. Participant observation involves the researcher being directly engaged in the activities of other participants in the research context. The position in the social setting is important for the outcome of the study. This method is used both in CCT (cf. Bettany 2007) and in PT, in which as explained in Chapter 2, section 2.3.5 it is used both in participant and non-participant role. Robson (2011) distinguishes participant observation by the different roles of the researcher as

- *complete participant*, where the role of researcher is concealed and he or she is fully embedded with the other participants (Marshall and Rossman 2016),
- *observer participant*, where the role of researcher is made clear from the start of the research and
- *Marginal participant*, where the researcher does not interact with participants to the study.

Between the three positions, the role of observer participant is the most likely to generate bias. Participants may vary their behaviour because of social acceptability (Marshall and Rossman 2016) and failure by the researcher to engender trust (Lincoln 1995). Researchers might also be biased because of the immersion in the situation, similarly to "going native" in ethnography (Marshall and Rossman 2016).

Generally, participant observation has the advantage of offering the opportunity to observe what goes on in the research context from a vantage point (Robson 2011). If paired with PT, it has a special advantage because the researcher has the opportunity to participate as an expert practitioner (Bueger 2014), therefore delivering far more detail on the elements of practices. Observations can usefully complement other methods such as interviews (Robson 2002). With PT in particular it can be useful to compare what participants say they do, with what they actually do (Bueger 2014).

In summary, semi-structured topical interviews were selected. This enabled topics such as elements of practices and individual meanings and ideologies as well as understanding of value to be captured. Observation was conducted to understand practices better. An expert focus group and interviews aimed at informing the viability of the dialogue between CCT and PT.

3.3.5.3   Interview guides

An interview guide is a semi-structured "aid memoire" which is used to ensure that an interviewer covers pre-arranged general topics that explore participants' views and ultimately address a project's research questions (Marshall and Rossman 2016). These topics need to be identified in advance and can be generated from literature. The semi-structured nature of the interview guide directs the participants' response to ensure the data required are generated but very importantly permits the participant's perspective to frame the phenomena of interest (Ibid.).

In the thesis' case studies, the structures of the themes of the four separated interview guides are derived respectively from the elements of practices as described by Mylan (2015) and those of identity construction as described by Bardhi and Eckhardt (2012) and Arnould and Thompson (2005). The interview

guides operationalizing the PT elements are split in two, where each set of questions addresses themes of the research. In addition, one interview guide seeks to observe participants whilst they are driving. This was useful to observe automobility practices supported by the PSS. Table 3-3 shows the themes emerging from the research questions. In the first research loop in the REBUS case study, a unique interview guide probed the themes, where the researcher probed both CCT and PT themes.

Practice Theory IG	
Research Objective	IG 1 Themes

To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption	*Theme 1: Recruitment*
	(Sample questions: 1) "What products did you get as part of the scheme?" 2) "How do you think you would explain this scheme to friends who could be interested?")
	    Theme 2 Meanings
	(Sample question: 1) "What values do normally inspire you when you buy products generally?" 2) "Going back to how you made the decision to rent or buy – can you please explain the values that influenced this decision?" 3) "Please tell me the story of how you became interested in environmental / sustainability issues?")
	    Theme 3 Competences
	(Sample question: "Please tell me the story of how you use this product on a typical day"
	    Theme 4 Materials – how do they compare with conventional materials for travelling / driving?
	The questions in theme 1 aimed at collecting information on materials

Consumer Culture Theory IG	
Research Objective	IG 3 Themes
To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction	*Theme 1 Meanings and ideologies of REBUS* (Sample question: 1) "What made you decide to rent instead of buying this product?" 2) "Why did you not take up the offer of leasing / renting the (product)"? *Theme 2 Identity construction* (Sample question: 1) "What image of you do you think renting these (products) projects?" 2) "Tell me more about how you use (the product) on a typical day. Please include the people you meet, whether you talk about the product, what they seem to think" 3) "How do you adapt and personalize these products for your needs? ?")
To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings.	*Theme 3 Value* (Sample question: 1) "Please tell me about the benefits you expected from this scheme?" 2) "How does reality compare with your expectations? Did you get more or less than you expected?")

To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption	Theme 4 Interaction of value with identity construction This theme emerged during the conversation whilst discussing the questions in theme 3

Table 3-3 IG and research questions - REBUS

Table 3-4 aggregates the three IGs for brevity and their themes and sample questions are related to the research questions. Following the findings from the REBUS case study, the researcher reflected (aided by advice from the two Supervisors) that exploring practices and identities and operationalizing both CCT and PT in one interview was challenging. With hindsight, although the decision was partly due to inexperience, it was partly justified by the difficulties of access to participants and the fact that in this case study the researcher travelled extensively, as demonstrated by Appendix F. When planning the data collection for the e-carclub case study, this reflection was actioned upon and three different IGs – with three different sets of interviews – were prepared and conducted separately.

Practice Theory IG	
Research Objective	*IG 1 Themes*

To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption	*Theme 1: Recruitment*
	(Sample questions: 1) "How did you become a member of e-carclub?" 2) "Would you recommend e-carclub membership to a friend?")
	    Theme 2 Meanings
	(Sample question: 1) "What does traveling which includes e-carclub cars mean to you?" 2) "What does driving cars rented as a member of e-carclub mean to you?" 3) "What does driving electric cars mean to you?")
	    Theme 3 Competences
	(Sample question: what were the new aspects of driving you had to learn? 1) "What were the new practices you had to learn about e-cars?" 2) "What were the new practices you had to learn about the rental system?")
	    Theme 4 Materials – how do they compare with conventional materials for travelling / driving?
	(Sample questions: 1) "What e-car models do you prefer driving?" 2) "Tell me about the electric cars themselves"; 3) "How do they compare with traditional cars?")

	IG2 Themes

	Theme 3 Competences
	(Drive along IG)
	Competences are explored during a "drive about" observation where the researcher rides together with a participant. The questions are as follows:
	
	[Before the drive]
	   Competences (1)
	(Sample question: "how you did you organize the journey we are about to go on?")
	[After the drive]
	   Competences (2)
	
	("What procedures do you follow at the end of the journey?")

Consumer Culture Theory IG	
Research Question	*IG 3 Themes*
To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction	*Theme 1 Meanings and ideologies of e-carclub* (Sample question: 1) "What does use / membership of e-carclub mean to you?") *Theme 2 Identity construction* (Sample question: 1) "What image of you do you think driving e-cars project?" 2) "What image of you do you think driving rented vehicles projects?" 3) "How does it feel to be a member of e-carclub?")
To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings.	*Theme 3 Value* (Sample question: 1) "What benefits did you expect?" 2) "What do you think is the value you can expect of e-carclub?")
To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption	*Theme 4 Interaction of value with identity construction* (Sample question: 1) "what does driving a Ferrari say about its driver?" 2) "What does driving a Skoda says about its driver?" 3) "What do you think driving an e-carclub car says about you?" 4) How does it make you feel?" "What do you think it represents?"

Table 3-4 IGs and research questions – e-carclub

The expert workshop was constructed around four worksheets which focused on the questions in table 3-5. The three expert interviews were more loosely structured around the same themes but comparatively less structured than the focus group. The worksheets are presented in Appendix E

Research Objective	Themes of expert interviews
To identify approaches to study the social and cultural aspects of Product Service System consumption	1. What insights do PT and CCT provide? 2. How can PT and CCT work together? 3. Can they be bridged at the point of design? Or… 4. Should they be compared only at the analysis stage?

Table 3-5 Questions used to focus expert workshop

In summary, four separate interview guides were designed to list research themes and supporting questions. One of the interview guides was designed to be administered before and after a drive of an e-carclub EV in order to understand the competences involved. Each of these interview guides were piloted before implementation to ensure they were suitable to collect the data required. Appendices A, B, C and D present the complete interview guides.

3.3.6 Sampling Strategy

Generally, sampling strategies are classified in probability and non-probability strategies. A sample is a selection of a number of units of analysis from a population (Robson 2011). A population includes all units that could be examined or sampling frame (Ibid.). Probability sampling strategies are suitable for studies using quantitative methods, where researchers are interested in statistical inference of the findings and representativeness of the sample in respect to the population (Ibid.). To select a probability sample, it is essential to have a full list of the population and each case in the sample needs to have an equal opportunity to be selected. Because of the exploratory nature of the study and it being a small-scale qualitative study, a probability sampling strategy was not suitable (cf. Ibid). The alternative, a non-probability sampling strategy, is one where it is not possible to specify the probability that a case will be included in the sample (Ibid.). The limitation of this type of sample is that findings are not necessarily representative of the population (Silverman 2003). This family of sampling strategies includes a range of methods, e.g. quota, dimensional, convenience, snowball, theoretical and purposive sampling (Robson 2011).

Quota sampling involves the selection of various elements of the population, e.g. a sample of managers and employees in an organization or samples from the two different genders or participants from each different socio-economic background. A quota is selected for each category. This method is normally used in specialist fields (ibid.). The limitation is that it is subject to bias because allocating a subject in a quota does not make the subject representative of a typical member of that type of individual (Ibid.)

Dimensional sampling aims at grouping units of analysis along a given dimension, e.g. in the case of a selection of employees, their weight and height and length of employment with the company. The limitations are similar to those of quota sampling (Ibid.).

Convenience sampling is where the nearest, most convenient or even willing person is selected to act as a participant. It is one of the least satisfactory methods of sampling (Ibid.) and an example of this is when participants self-select or volunteer for an interview because they are particularly interested in the interview topic, which may bias the findings.

Snowball sampling is a sampling method which involves participants being recruited by introduction by a previously interviewed participant. This is good when researching social networks (Ibid.) but similarly to convenience sampling it may cause bias because participants may be introduced to the project because they are known to have or have had specific problems or opinions.

Theoretical sampling is where units of analysis are selected based on their relevance to a given theory the researcher is basing her or his study on (Silverman 2003, Marshall and Rossman 2016). This method involves choosing cases based on the theory underpinning the research, cases seen as deviant and varying the sample size based on the results (Silverman 2003). This method can present issues of bias due to trying to generalize the findings in accordance to a theory based on a small non-probability sample (Ibid.).

Finally, in *purposive sampling* the researcher selects units of analysis based on his or her judgement depending on the needs of the project (Robson 2011). In this method, a researcher selects units because they can illustrate features or processes of interest (Silverman 2003). For example, a researcher may select a number of current, lapsed and non-members of e-carclub. Purposive sampling strategy is common in qualitative research (Hoepfl 1997, Silverman 2003,

Marshall and Rossman 2016). It is a more flexible strategy than theoretical sampling. This type of selection may be criticized because of bias deriving from the subjectivity of the researcher's judgement. An equal representation of different categories of participants, e.g. users, non-users and lapsed users is important to enable a range of voices (Lincoln 1995) to ensure credibility by including opposing views (Seale 1999, Silverman 2003).

A purposive sampling strategy was implemented in the research, following the recommendations of Hopkinson and Hogg (2006) and Belk and Sherry (2007) for CCT and Bueger (2014) for PT. This was to address three factors, i.e. the difficulties of access in both cases, the need for the participants to be aware and possibly users of PSS and in the case of REBUS, an individual or couple with an infant or in the process of giving birth to one. Participants were recruited to the research that satisfied these criteria.

In the case of REBUS, participants were members of the NCT, were aware of the infant care PSS and included users and non-users. All the participants in the REBUS project self-selected through a link on the NCT web site. The structure and wording of the instructions on the recruitment web page enabled the inclusion in the sample of parents who had not adopted the PSS, those who had rented one product type only, e.g. car seats or strollers and those who adopted both.

In the case of e-carclub, the participants included private drivers who were at the time members of the Wolverton branch of e-carclub, managed by a not-for-profit organization called *Future Wolverton* (FW). These participants were contacted with the permission of e-carclub and FW. To gain access to e-carclub members, contact was made by the researcher with Future Wolverton, the management of Watford City Hall and the Environmental Team at the University of Hertfordshire. There were 19 participants, of which five were from Wolverton, six from the University of Hertfordshire and eight from Watford City Hall. Access to four of the participants in Watford was gained through Watford City Hall who introduced the researcher to a recreational group called the Woodcraft Folk (woodcraft.org.uk), a children activity group in Watford. The parents of the children that participated to this group agreed to participate to the interviews, as they were aware of e-carclub through Watford City Hall as they used the Council premises for meetings.

As the study progressed, theoretical considerations guided the sampling criteria further. This application of theoretical criteria as the research progressed and theoretical reflections emerged was consistent with purposive sampling (Marshall and Rossman 2016). This for example drew on the conclusions of the REBUS case study and of the theoretical frameworks adopted (cf. Robson 2011, Marshall and Rossman 2016). Snowball sampling was used to access e-carclub members that were difficult to access by other means. This is acceptable in sampling plans where difficulties arise to access the required number of participants (Marshall and Rossman 2016). Opportunities arose where a participant introduced the researcher to other participants. Judgement was exercised to ensure that the new participants were suitable for the sample. The e-carclub sampling strategy was driven by the findings of the REBUS case study, for example, the researcher determined that whilst the participants to the PT based interview needed to be experts and therefore members of e-carclub, participants to the CCT based interviews only needed to be drivers aware of e-carclub. All participants selected were qualified by e-mail before interviews as active and lapsed members of e-carclub or people who rejected an offer of membership.

3.3.7 Data analysis

The qualitative data collected for the research included utterances by participants and field notes taken by the researcher. Utterances were recorded on two Olympus digital recorders (the second recorder acted as a backup if the other stopped operating). The field notes reported practices observed and the products participants used (strollers, infant car seats and EVs). The aim was to generate an information rich, full, real account of the phenomena (cf. Robson 2011). Four approaches to data analysis are identified by literature, (cf. Tesch 1990, Drisko 2000, Silver and Levins 2014):

- **Quasi-statistical approach**, concerned with frequencies of words as in content analysis (Marshall and Rossman 2016), which can convert qualitative data in quantitative and even graphical format (Silver and Levins 2014) and which may determine the importance of the themes, e.g. when a word is uttered by many participants

- **Template approach**, this approach uses codes to "categorize" the narrative, e.g. interview transcripts, which are allocated into a specific code, based on the researcher's interpretation. Codes can be pre-set based on the analysis of the literature, which may suggest themes (Silver and Levins 2014), they can be set during the analysis by the researcher or a combined approach can be used, where the researcher pre-sets codes based on theory and then adds new codes based on interpretation. This approach has been called flexible template (cf. Miles and Huberman 1994)

- **Editing approach**, this approach also uses codes but these emerge during the analysis based on the researcher's interpretation. This approach is used by grounded theory (Glaser and Strauss 1999, Marshall and Rossman 2016) and is useful when theory is underdeveloped

- **Immersion approaches**, which rely on the insight and intuition of the individual researcher

The approach selected for the analysis depends on the study's objectives and research design. A template approach was selected because drawing on CCT and PT suggested codes that aided data interpretation. The editing approach was excluded because of the availability of the theoretical framework selected and the quasi-statistical approach was excluded because of little compatibility with the constructivist perspectives chosen, CCT for example (cf. Belk and Sherry 2007). An important advantage of the template approach is that it is systematic and facilitates data analysis. From the beginning of the analysis however, themes emerged that did not quite fit the pre-set codes generated from theories. This led the researcher to set up codes based on the on-going literature review. For example, "ICT practices" (figure 3-2) is a sub-code of competences which was originated based on Pialot's et al. (2017) discussion of the role of ICT in the interaction between suppliers and customers (for example, how users book electric vehicles for driving sessions). "Distribution" (figure 3-2) is a code that was set based on Gottberg and Cook's (2008) argument of the importance of geographic density of demand. The approach used was therefore a flexible template approach after Miles and Huberman (1994).

Data analysis consists of three interlinked activities, *data reduction, data presentation* and *drawing conclusion*s (Ibid.). Data reduction consists of

reducing and ordering large amounts of data – in this case around fifty transcripts of over 50 pages each – to a manageable format, by organizing them in "themes". In the flexible template approach, the codes identifying the themes were originated by the initial theoretical approach and then they were refined as the analysis proceeded through insights drawn from literature as well as the data themselves. For example, data were coded at a node called "values" which was then collapsed into a node called "meanings" together with other child nodes, e.g. "norms". In some cases, collimation of data and literature suggested nodes, for example participants expressed their concerns with health and safety which corresponded in the literature to fear about contagion (Bardhi and Eckhardt 2012) through sharing products with unknown users, therefore a node "health & safety" was set. On line research and literature mentioned quality assurance, which was also alluded to by consumers, so a code was established. Importantly the initial framework evolved as the research progressed. As expected from Sadler (1981), the following challenges were faced:

1. Data overload, limiting the ability of the researcher to process all the data and also requiring considerable time for processing
2. Initial misreading of the data, e.g. an initial emphasis on "values" rather than "meanings" that was at a second reading not considered productive
3. Information availability, e.g. it was harder to access participants who had not adopted the PSS, making it harder to identify reasons for rejection
4. It was initially difficult to identify special cases, i.e. participants that were different from the majority.

Data analysis was supported by an analytical software package called NVIVO (version 10 and 11 were used in the course or the study's life cycle), suitable for qualitative data analysis (Silver and Levins 2014). This choice was made because NVIVO is versatile and suitable to perform thematic as well as content analysis (Ibid.) and because the researcher was familiar with and licensed for this package.

3.3.8 Research Quality

E-carclub and REBUS are both case studies of use orientated PSS, which addresses the limitations of Mylan's (2015) study. These limitations arise from her application of PT to types of consumption other than PSS. Data collected

from the e-carclub context is representative of the participants' relationship with that specific use orientated PSS (cf. Marshall and Rossman 2016).

Research needs to satisfy quality criteria to be worthwhile. This is necessary so that this study is a meaningful exercise. Robson (2011) lists the criteria of trustworthiness in research as *validity, reliability* (both defined in 3.2.4) and *generalizability*. Generalizability is the applicability of the findings of an inquiry outside the context of that inquiry (Ibid.). These criteria apply to fixed research design, typically quantified (Anasta and MacDonald 1994, Robson 2011). Quality criteria are also necessary to avoid the doubts on trustworthiness, which are often levelled at qualitative research (Silverman 2003, Robson 2011). "The trustworthiness or otherwise of findings from flexible research is the subject of much debate" (Robson 2011,154). For example, qualitative research is often accused of "anecdotalism" (Silverman 2003,177), when snippets of data are used to support a given thesis. Replicability of research by other investigators is also problematic because of differences between contexts (Robson 2011).

The discussion in 3.2.5 however mentioned the debate on the relevance of these quality criteria to qualitative, constructivist research. For example, as constructivist case study research is specific to the context of analysis, findings cannot be generalized outside that context. Alternative ways needed to be adopted in this study to achieve the features of trustworthiness in line with its constructivist, qualitative nature. The criteria adopted were credibility, pursued by a faithful documentation of interview data, which included audio and word files and fairness, by considering opposite points of view of participants and alternative interpretations (cf. Robson 2011) or deviant cases (Silverman 2003). This is what Robson (2011) refers to as *negative case analysis* and can address suggestions of anecdotalism.   Other criteria adopted were plausibility and relevance, surveyed by constantly comparing the findings with the theoretical frameworks adopted for the research and to inform the interview guides and also primary and secondary data (for example, the statement of participants on safety of pre-used car seats with NHS and NCT web sites documenting the same). Transferability was assessed, Following Yin (1994), by replication. As explained above, generalization is not possible but assessment can be made of whether the results of a case study can be transferred to another context. The e-carclub case study replicates the REBUS one and offers opportunities for constant comparison (cf. Silverman 2003). Accuracy is a feature that can

achieve trustworthiness (Robson 2011) and audio recording is a way to document accuracy (Ibid). Credibility of data interpretation can be affected by imposing a given framework on it (Ibid.), however informing research methods with theory can also assist research plausibility and relevance (Seale 1999). Sources of bias caused by using a framework can be addressed by demonstrating and maintaining an "audit trail" (Robson 2011, 159) or database (Yin 1994) of how that interpretation was reached. This audit trail can also document credibility. In other words, traceability is a feature which can help document credibility and transferability. Before operationalizing the research, the interview guides drafted were piloted to ascertain that they could be relied upon to collect the data required and participants understood the questions. Few changes were necessary.

An important enabler of the study's quality was the researcher's learning process. The REBUS case study built the researcher's experience and ability, which refined the quality of data collection (cf. Hoepfl 1997). For these reasons, the findings should be somewhat transferable (cf. Ibid.) to other cases of PSS.

3.3.9 Ethical implications

As in any studies involving research on human participants (cf. Bell 2010), this study had ethical implications. The first important aspect of this was the need to obtain informed consent. In both case studies, the role of the researcher and the nature of the research was explained to the participants from the start, in line with Marshall and Rossman (2016). Informed consent was obtained by means of written communication.

No participants were minors or vulnerable adults. Participants to REBUS however included women who were pregnant or had recently became mothers. This made recruitment of these participants problematic and initial contacts with an NHS trust seemed to suggest that these individuals could be considered vulnerable participants. However, collaborating with the NCT and following their advice resolved this problem. The e-carclub case study did not present ethical issues apart from obtaining informed consent.

Consistent with Bell (2010) and, importantly, with the regulations of the *Open University*, ethics clearance was applied for and obtained (HREC/2013/1534/Catulli/1). One of the aspects of the ethical management of this research is data management. In this respect, whilst anonymized interview

data will be kept on record, personal data of the participants will be destroyed in June 2020. They are in the meantime kept secure in a password-protected laptop and backed up on password-protected servers at the Open University and at the University of Hertfordshire, as well as on two hard drives that are securely kept in a locked cabinet. Finally, written permission was obtained from DEFRA, the funder of REBUS, to publish the research in journals and in the thesis.

3.3.10   Summary

In summary, the purpose of this study is to explore PSS consumption using CCT and PT to gain new and useful insights on this complex process. A case study strategy was followed to meet this aim, drawing on secondary and primary qualitative data. Two case studies were completed which focused on use orientated PSS consumption in two contexts. The researcher adopted a flexible design strategy for the research to explore PSS consumption with two use orientated PSS, one based on infant products, the other on electric cars. The principal advantage of this approach was the opportunity to adjust research design as the study proceeded. In particular, the results of the first case study on infant mobility products informed changes to the design of the research on electric car clubs. For example, data from the first case showed that it was difficult to draw both CCT and PT data and concepts such as ideologies were hard to explore, thus separate interview guides were draft and the wording of the interview guides was amended, see tables 3-3 and 3-4.

The methods of data collection selected included semi structured interviews and participant and non-participant observation. Data were collected and analysed in line with the two theoretical frameworks. A flexible template method was used to analyse data. NVIVO was used to reduce the data in themes. NVIVO facilitates the prompt retrievability of all data, themes identified by coding and reflective memos to ensure the auditability necessary to guarantee credibility and transferability (Silver and Levins 2014).

3.4 Applying the research design

3.4.1 Introduction

REBUS, of which the researcher was Principal Investigator, had a wide focus. The research focused on specific aspects of PSS consumption, so interview guides were developed to address those specific aspects over and above the requirements of REBUS. This facilitated comparison between the two case studies by focusing on similar objectives and results.

The findings from the REBUS case study informed changes to the approach as it was applied to the second case study, e-carclub. This two-looped iterative process delivered a major benefit because it enabled the researcher to refine his thinking by reflecting on the findings of REBUS.

An initial secondary data collection was performed to understand the aspects of the two contexts, e.g.

- What were the exogenous aspects in operation?
- What were the endogenous aspects in operation?
- What could be found about the conventions constraining what parents and drivers do?
- What were the meanings participants associate with driving and transporting infants?
- How were the activities of infant mobility and private personal mobility portrayed in media (including fiction, film, etc.)?

The following sources were consulted to collect such secondary data:

1. Market reports, e.g. Mintel
2. Website and documentation of the Baby Products Association (Baby Product Association 2014)
3. NHS (nhs.uk), NCT (www.nct.org.uk) and Mumsnet (Mumsnet.com) web sites
4. E-carclub's website
5. Websites and literature from organizations that are involved with car clubs and car sharing, e.g. Carplusbikeplus (2016)
6. Manufacturers' and suppliers' websites and documentation
7. Academic literature featuring both contexts
8. Design articles on the products involved

The next sections narrate how the research design was implemented in each of the two case studies and what changes were made to the initial research design.

3.4.2 Data Collection

3.4.2.1 REBUS

In the REBUS case study, the recruitment process was designed to access both users and non-users. Recruitment took place through the following process:

- The participants would visit the NCT website where they had been shopping for infant equipment and were reviewing information on the PSS
- They would click on a link that would take them onto REBUS' website. There they would be informed about the research and offered a £20 gift voucher as a "token of gratitude" for participating to the interview. They would then fill their details on the web site
- They would finally be contacted by the researcher

Thirty-two semi-structured interviews were conducted during the implementation of the pilot. These participants were all aware of the PSS provision and some were accessing car seats, strollers or both for use through the PSS. The participants were mostly females, with only four males interviewed in conjunction with their partner. Eleven participants were not PSS users, however 14 acceded car seats, 1 a stroller, one a carrycot and five a combination of products. Appendix F shows the details of the participants and the products and product combinations they acceded for use. The interviews were conducted in various locations in the UK and appendix F shows these locations. Participants were interviewed in their dwellings. The interviews in this case study used a unique interview guide which included questions informed by the frameworks of Bardhi and Eckhardt (2012) and Mylan (2015). In these interviews, the researcher explored the relationship of participants (parents) with the products they had rented through the PSS. Interviews were recorded, transcribed, analysed in NVIVO and finally interpreted in the light of the theoretical frameworks outlined in section 2.2.1 and 2.2.4. The 32 transcripts are in Word format. Both transcripts and digital audio recordings can be accessed via a hyperlink through the NVIVO file. Together with interviews, non-participant observation was conducted and the observations were filed in field notes. These observations focused on very basic elements, such as

- The product(s) that the participants had rented and in what conditions it was at the time. In some cases, the participant agreed to show the packaging the product (s) had come in
- The location and nature of the participants' dwellings. For example, aspects were recorded such as distance from town centre and shops, as well as the nature of the neighbourhood. The type of dwelling was important because previous research, (cf. Catulli 2012, Catulli et al. 2013) had suggested that space limitations were important to parents' amenability to PSS

Notes from observations were transcribed and stored in NVIVO.

3.4.2.2   E-Carclub

Following reflections after the REBUS' findings, when approaching the e-carclub case study, an important change was made to separate the interviewing process using two distinct interview guides. In keeping with Bueger (2014), the participants to the interviews were all members of e-carclub, albeit the sample included active and lapsed members. In contrast, participants interviewed using the interview guide informed by CCT included some users but also non-users of e-carclub.

Initially the researcher planned to interview members from the "branch" of e-carclub based in Wolverton. The management of Future Wolverton introduced a number of participants. However, the number of members in this location was limited and a decision was made to recruit participants from two other sites:
- The *University of Hertfordshire* (UH), which manages an e-carclub hub and has several users
- *Watford City Hall* (WCH), which manages several EVs and has several users.

UH and WCH could introduce the researcher to individuals who whilst aware of the scheme had not enrolled into it. Access to participants was made through e-mail. Nineteen interviews were conducted,

- 3 in Wolverton in cafes,
- 2 at "*The Hub*" in Walton Hall (the café of the Open University),
- 2 in Hatfield (the café of UH and a participant's own office),

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- 1 in Camden Town (London),
- 1 in Romford (Greater London).

The balance of the interviews were conducted in Watford, of which three in the participants' house. Appendix G shows the characteristics of participants and their details, in order to note that these data came from different contexts. As in the previous process, the 19 interviews were audio-recorded, transcribed in Word and analysed in NVIVO in a file separate from the REBUS file. Both recordings and transcripts can be accessed by the relevant NVIVO file.

In this case, interviews were complemented by observation, with the researcher this time, after Marshall and Rossman (2016), in a hybrid role between observer and complete participant. The researcher in fact had been a member of e-carclub for a while and following Bueger (2014) he was able to report observations from his own experience. In addition, the researcher completed two accompanied drives as a passenger, where he could observe all the process of access to the service including the disconnection and reconnection from the charging station but not the booking. The researcher however as a member has performed bookings through a laptop, therefore he was able to report on the booking process because of participants' narration and own experience. The observation aimed to collect information on the following:

- Materials (EV) and what challenges they could present to users
- Competences, e.g. booking the vehicle, journey planning, connecting and disconnecting the EV from the charging station, driving techniques

Notes from observations were transcribed and stored in NVIVO

3.4.2.3 Dialogue between perspectives

An expert "workshop" or focus group was conducted at the Product Life Times and the Environment (PLATE) (http://www.plateconference.org/) conference in Delft, Holland in November 2017, well after the analysis of the data of the two case studies was completed. Shortly thereafter three expert interviews were conducted with one academic expert in PT, one in CCT and a third in *Social Marketing* with specific knowledge of action research focused on sustainability. These interviews were undertaken in addition to the case studies and informed decisions on how to develop a dialogue between CCT and PT viewpoints on PSS consumption.

3.4.3 Data Analysis

Three sets of primary data including expert interviews and focus groups, based on appropriate interview guides for each of the two approaches described above, were recorded electronically and transcribed. The two sets of consumer data were then coded using a flexible template approach (cf. Miles and Huberman (1994), where coding was informed by literature. This is done by "pre-setting" codes based on themes highlighted by literature, e.g. status and materialism (cf. Richins 1994b, a) and pro-environmental values (Craig-Lees and Hill 2002) to code the data into.

Data were coded to identify themes as suggested by the literature informed flexible template. These themes were then clustered in accordance with the respective conceptual frameworks of Bardhi and Eckhardt (2012) and Mylan (2015), updated in the light of the findings of the primary research conducted in the context of infant equipment. Table 3-6 below summarizes the methods used.

Aspect	Strategy
Research Strategy	Case studies of an infant care PSS and a car club PSS featuring electric vehicles.
Methods of data collection	Topical qualitative semi-structured interviews and observation
Type of participants	Parents using infant care products; Male and female active, inactive and lapsed members of e–carclub
Sampling strategy	Purposive sampling strategy of an equal number of current and lapsed users as well as non-users of e-car club.

Table 3-6 Summary of methods used

3.5 Approaches to interpretation

3.5.1 Approaches to coding

Coding is the process to arrive at themes (Silver and Levins 2014). The data collected by interviews and observation were initially analysed using thematic analysis based on a flexible template approach as described in section 3.1.8. Thematic Analysis is an analytical technique which aims to identify recurring patterns in qualitative data (words) in order to identify themes (Braun and Clarke 2006). Thematic analysis was selected because having opted for an abductive logic, data could be organized in themes, some suggested by existing literature, some from pre-existing knowledge of the researcher following Miles and Huberman's (1994) flexible template model. Braun and Clarke (2006) propose a process with six steps that can be used to perform the analysis. Table 3-7 summarizes these steps.

Phase	Description of the process
1. Familiarising with data	Data transcription, reading and re-reading data and jot down initial ideas
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across entire dataset, collating data relevant to each code
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4. Reviewing themes	Checking if themes work in relation to the coded extracts (phase 1) and the entire data set (phase 2), generating a thematic map of the analysis
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme and the overall story the analysis tells, generating clear definitions and names for each theme
6. Producing the report	Final opportunity for analysis. Selection of vivid extract sampling, final analysis of selected extracts, relating back of the analysis to research question and literature, producing a scholarly report of the analysis

Source: Braun and Clarke (2006)

Table 3-7 Phases of thematic analysis

The researcher analysed the data in NVIVO. After the data were transcribed, the 32 (REBUS) and 19 (e-carclub) Word files and the 51 audio transcripts were imported in NVIVO in two different files, one for each case study. This unfortunately precludes some automatized comparison of data between the two cases but is well worth doing to avoid computer crashes due to the size these files can attain. Figure 3-2 shows an example of categorization of data nodes in NVIVO
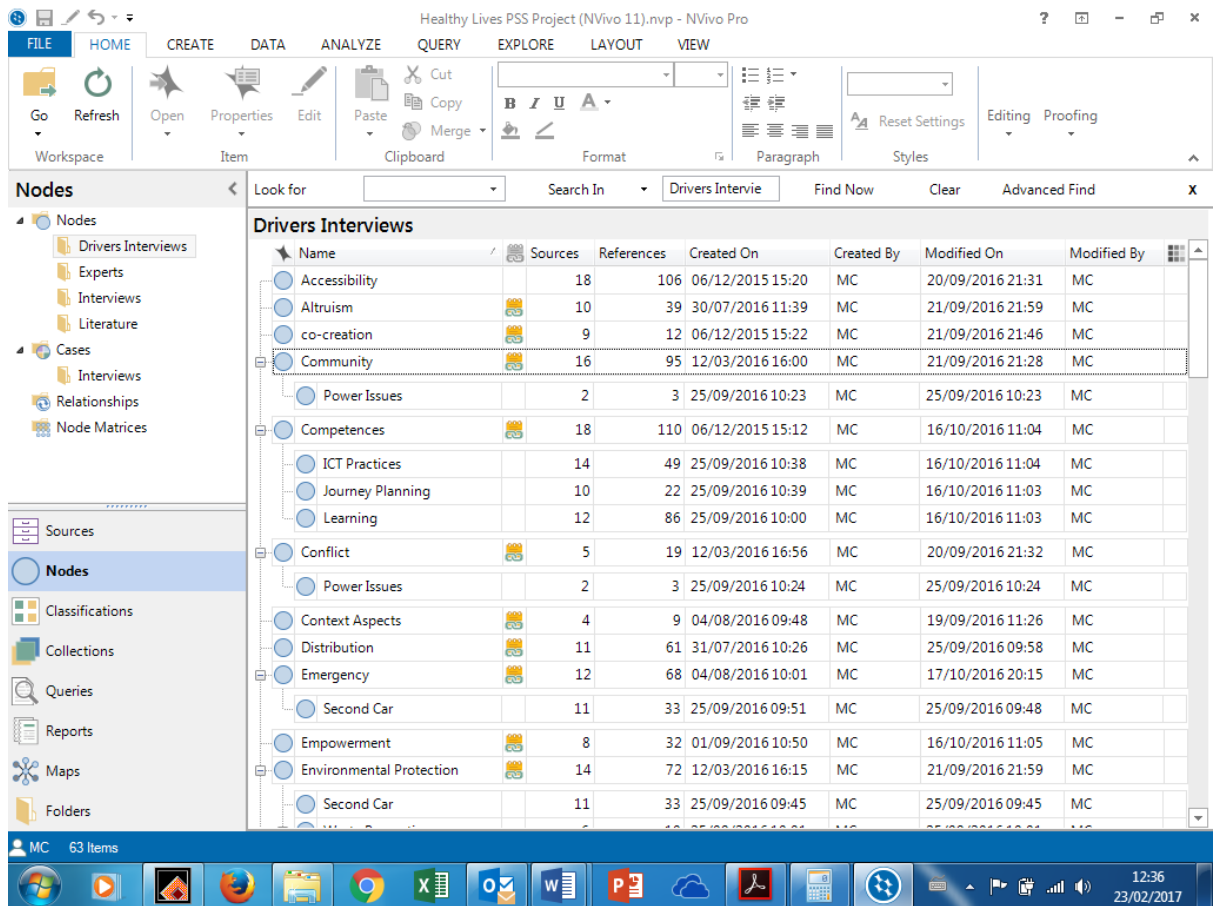
Figure 3-2 Thematic analysis in NVIVO

Data were coded and arranged in themes and sub-themes. A number of codes may build up to a theme and meaning is given to codes by the researcher in order to arrive at a theme (Silver and Levins 2014). In the project, themes might represent meanings, e.g. "freedom" and in the case of PT competences, such as booking the EV or infant equipment using apps. Sub-themes are themes within themes. For example, in the e-carclub interviews database, "journey planning", "ICT" and "learning" are sub-themes of the "competences" theme; "power issues" is a sub-theme of "community". Themes and sub-themes can recur multiple times in the project database (Braun and Clarke 2006). After the initial coding, the researcher reviewed the initial themes and where appropriate he aggregated those that were similar or related to simplify the structure of the database. Very usefully, NVIVO has a function of linking memos to codes. This is a fundamental step in the interpretation (Silver and Levins 2014). Memos are important because they record the reflections of the researcher during the coding process (and therefore explain and justify interpretation) but also because they are an audit trail that allows other researchers or the researcher after a long period, to reconstruct the interpretation process. The next sections describe the interpretative framework.

3.5.2 Data interpretation

3.5.2.1 REBUS

Coding Table – CCT

a. *Problem definition*

How use orientated infant care PSS contributes (or not) to parents' consumer identity projects.

b. *Conceptual framework*

Access Based Consumption (ABC), "transactions that can be market mediated but where no transfer of ownership takes place"(Bardhi and Eckhardt 2012) was selected as it shares with PSS a focus on similar typologies of consumption. The six dimensions proposed by Bardhi and Eckhardt (2012) were adopted for the study of Access Based consumptionscapes and applied to the context of infant care products, i.e. car seats and strollers. Mapped on the six dimensions, Access Based consumption of this typology of products can be characterized as seen in table 3-8:

Coding Term	Example of data collected
(1) Temporality	Longitudinal, short to medium term, continuous access for a medium length of object usage (e.g. six months, one year)
(2) Anonymity	At home (possession) and anonymous (no contact with previous and subsequent users) but characterized by knowledge exchange with provider
(3) Market mediation	Market mediated, as participant perceive themselves as "customers" and the motive is profit; but provided by a partnership between a commercial company (Dorel) and a third sector organization (the NCT).
(4) Consumer involvement	Self-service (apart for delivery at the start and collection at end of term, which is performed by provider)
(5) Type of accessed object	Based on an object that can be considered functional but has potential for considerable symbolic, experiential and emotional value – stroller more so than car seat
(6) Political consumerism	Evidence that the selection of this mode of consumption can be motivated by social and environmental values

Table 3-8 CCT Coding Table

3.5.3 Phenomena investigated

The list below presents the phenomena under investigation. Consumer identity projects and consumptionscape were defined in Chapter 2.

- Participants' identity projects, i.e. ways participants define themselves by means of meanings (Arnould and Thompson 2005, 2007) attributed to the accessed object and their resulting expectation of functional, hedonic and / or symbolic (sign) value by means of identification with the object accessed
- Participants' value co-creation processes, involving contribution of meanings and values that contribute to their identity projects
- Participants' relationships with the two different types of object in the pilot, with the provider and other parents
- Processes by which participants gain membership or sense of membership of brand communities
- Socio-cultural dynamics that are sources of learning and inspiration of meanings connected with the uptake of PSS (access-based consumption of products)
- The specific features of the access based consumptionscape of infant care PSS and their impact on uptake by individual participants

Coding table - PT

From this perspective, as seen in Chapter 2.2 the unit of analysis of the research is the proto-practice (see Chapter 2) of the study. The proto-practice is *transporting infants safely and comfortably and providing for them a safe and comfortable place to sleep or play utilizing a use orientated PSS.* The focus of the PT based study is outlined below. Table 3-9 summarizes the PT coding table.

  a. *Problem definition*

How use orientated infant care PSS are appropriated and appreciated – or not – into parenting practices.

  b. *Conceptual framework*

The researcher adopted Mylan's (2015) proposed framework for the investigation of PSS consumption. In that framework, key concepts to investigating infant care practices are:

Coding Term	Example of data collected
(1) Material	products, e.g. car seat; stroller; mattresses; blankets; nappies and other consumables, including infant food; vehicle (to install car seat on)
(2) Competence	Knowing which product is best in terms of ergonomics; mobility (e.g. all terrain wheels); quick release seat installation on vehicles. Using products on various terrains; open and close strollers
(3) Meanings	parental pride (showing one's competence), safety, hygiene; parental love (the child is comfortable, protected from cold, etc.); social meanings (the product is fashionable – it expresses the practitioners' social identity), convenience, independence, e.g. quick mounting of car seat on car, lightweight stroller to be put on public transport
(4) The internal dynamics	- Raising concerns for safety- e.g. Cot Death Syndrome, back problems (limit sitting in car seat to 2 h) - Hygiene concerns - Infants' natural growth. This has consequences for practices and calls for replacement of products (e.g. car seat size, sitting up buggies) - Birth rate trends – couples having smaller numbers of children, hence a disincentive to buy these products - Changes in product architecture, e.g. light alloy, carbon, fashion, foldability, Isofix fittings (to enhance safety and ease to install on car - Integration of products – e.g. travel system
(5) Nature of linkages	Car seats and strollers are tightly linked with meanings of parental pride and love, health and safety, cleanness, purity
(6) Linkages to other practices and dynamics of multiplication and differentiation	Car seats are tightly linked to automobility practices (keeping a child in a car seat is predominantly for driving) Loose links with other practices, e.g. walking, shopping, visiting friends or spending time socializing. Special products have emerged to accommodate these practices, e.g. strollers with large wheels for powerwalking and jogging, lightweight prams to load these on bus. These other practices have their own dynamics, e.g. - Trend to shop for longer and out of town. This means buying more products – hence looking for more carrying space on stroller - Urban living – small flats with less space to store products - No cars in urban centres – hence occasional use of car seat – so less reasons to own one and more reasons to use one for short term (rental)
(7) Processes of appropriation	Participants (practitioners) use and consume materials, i.e. stroller and car seat, integrating it with the other materials listed above. Participants however exercise product stewardship for when they need to hand it back. These include conserving packaging used to protect them.
(8) Processes of appreciation	Prams are attributed meanings such as parental pride and competence, as well as fashion value and safety; selection of a rental solution in lieu of purchase can be taken to signify thrift.

Table 3-9 PT Coding Table

Phenomena investigated

Within the focal practice shown in table 3-9, the study investigated:

- Processes by which participants were recruited into REBUS practice
- Processes by which REBUS PSS proto-practice become (or not) an established practice
  - Competences participants must acquire
  - Meanings the practice is appreciated with
  - Materials participants use (e.g. what stroller / car seat do they use exactly?)
  - Processes of integration of the elements of the practice
- Processes by which participants lapse from REBUS PSS practices of infant mobility
- Processes of integration of REBUS PSS practices with other practices of personal transport

Narratives of practices by participants are considered a valid alternative to the direct observation of practices (cf. Halkier and Jensen 2011, Bueger 2014)

3.5.3.1 Reflection

During the analytical process of the first case study, REBUS, an iterative process of reflection led to changes in the approach. The findings and learning from the REBUS case study led to refinements in the interview guides, with questions driven by each framework better differentiated (a better separation between CCT and PT). The coding was simpler compared to the initial analysis, because the researcher in the first case study had coded data at nodes called "values" and "norms". Following the theoretical framework, these nodes were found not to be relevant and were collapsed in a node called "meanings". In the second case study, the data were directly coded in the node "meanings".

Some of these changes of course were due to the design characteristics of the two PSS. In the case of REBUS, although it did not involve product ownership, the PSS involved temporary possession (e.g. for six months). This means that the participants had control over the product, e.g. in respect of when to use it. In contrast, in the case of e-carclub the participants were in possession of the EV only for a short time (e.g.one hour) following a booking. It is logical therefore

to expect different types of concerns about control in this case. The next section explores the interpretative framework used for e-carclub.

3.5.3.2 E-carclub

Coding Table - CCT

a. _Problem definition_

How use orientated e-car PSS contributes (or not) to drivers' consumer identity.

b. _Conceptual framework_

Bardhi and Eckhardt (2012) used CCT, drawing among others on Belk's (2007, 2014a) perspective on sharing, to shed light on _Access Based Consumption (ABC)_, defined in Chapter 2. Bardhi and Eckhardt (2012) have proposed the ABC term to describe Zip Car car club, which can be considered a use orientated PSS (Catulli et al. 2014). Their proposed conceptual framework is indeed very useful to explore key aspects of a use orientated PSS. ABC has therefore been selected for CCT based research, as it can be considered analogous to use orientated PSS (Catulli et al. 2015). Mapped on the amended six dimensions, ABC of this typology of products can be characterized as follows:

Coding Term	Example of data collected
(1) Temporality	Longitudinal, short to medium term, continuous or discontinuous access for a medium duration of object usage
(2) Anonymity	No contact with previous or following drivers; EV booking done through web interface.
(3) Market Mediation	Consumers co-create value by attributing EVs meanings of environmental protection. Driver may want it to be known that he / she drives electric vehicle but not that he/she is renting it. Consumers co-create value with elements of service: The service is provided by a partnership between a commercial company (e-car) and a third sector organization (Wolverton community association).
(4) Consumer involvement	EV is booked with web support, consistent with PSS; driver uses charging stations, specific to EVs; driver is required to leave car in reasonable state of cleanliness and place it on charge at the end of each booking, specific to PSS.
(5) Type of accessed object	Based on an object, EV, that can be considered functional but has potential for considerable symbolic value, i.e. pro-environmental meanings.
(6) Political consumerism	This type of automobility, including EVs, might be motivated by social and pro-environmental meanings and political engagement of drivers with environmental agenda.

Table 3-10 CCT Coding table

<u>Phenomena studied</u>

- Participants' identity projects, i.e. ways participants define themselves by means of meanings (Arnould and Thompson 2005, 2007) attributed to the accessed object and their resulting expectation of functional, hedonic and / or symbolic (sign) value by means of identification with the object accessed

- Participants' value co-creation processes, involving the contribution of meanings and values that contribute to their identity projects

- Participants' relationships with the EV in the PSS, with the provider and other drivers

- Processes by which participants gain membership or sense of membership of brand communities

- The socio-cultural dynamics that are sources of the learning and inspiration of meanings connected with the uptake of PSS (access-based consumption of EVs)

- The specific features of the access based consumptionscape of EV PSS and their impact on uptake by individual participants

a. _Problem definition_

How use orientated EV PSS are appropriated and appreciated – or not – into automobility practices

b. _Conceptual framework_

The researcher adopted Mylan's (2014) PT based framework for the investigation of PSS consumption. The proto-practices of car clubs, including e-carclub, may recruit some types of drivers (Choo and Mokhtarian 2004, Le Vine et al. 2009, Karanika and Hogg 2012). These proto-practices may then be a complement to normal driving practices (Le Vine et al. 2009), be transient or possibly become the main driving practices. The proto-practice of analysis therefore was _self-directed automobility using an electric vehicle (EV) use-orientated PSS_. In this framework, key concepts to investigate the proto-practice are:

Coding Term	Example of data collected
(1) Material	Products (Renault Zoe, Kangoo and Nissan Leaf vehicles), i.e. e-car; membership, parking slots, web site, laptop, phone or tablet to check availability and book car, specific to PSS; charge card, charging equipment and charging stations, specific to EV driving practices.
(2) Competence	Booking of EV, specific to PSS; disconnecting and connecting EV for charging; driving electric vehicle, navigation (incl. locating charge stations), specific of EV driving practices; journey planning, both PSS and e-cars
(3) Meanings	Cost-effectiveness and affordability (saving money on fuel), environmental protection (specific to EV practices). By contrast, "traditional" owned cars are linked to meanings of freedom, independence and autonomy as well as status and materialistic values (Belk 1985, Richins 1994a)
(4) The internal dynamics	Specific dynamics to EVs, i.e. • Increasing availability of charging stations • Various protocols of charging, hence problems of compatibility of cars and charging stations • Increasing driving range and performance of vehicles • Electric cars increasingly becoming more accessible • Environmental Protection becoming an accepted convention and increased information availability (Buttel 2000, Frank et al. 2000) • Government support (e.g. subsidies) of e-cars Dynamics of all car clubs, • Interest in sharing models (car clubs) • Financial pressures and distress purchase of automobility
(5) Nature of internal linkages	EVs are linked with meaning of sustainability but also of limited range and dependence on charging stations; also concerns with performance and service availability, specific to EVs. Personal mobility by "traditional" owned cars is linked with existing infrastructure (e.g. service stations, the road) and meanings such as freedom and autonomy, this applies to PSS.
(6) Linkages to other practices and dynamics of multiplication and differentiation	EVs are linked to practices such as • Going to work • Visiting friends / associates • Week end traveling • DIY activities • Shopping • Other travel practices, e.g. train travel Nature and length of journeys multiply and diversify materials, e.g. driver may require a larger, more powerful car. User may require car with more loading space. Need to use car for longer period might require diverse pricing structures
(7) Processes of appropriation	Drivers drive cars but as EVs are part of a PSS, they are not allowed to make any personalization.
(8) Processes of appreciation	Driving electric cars is associated with meanings of environmental protection and economy

Table 3-11 PT Coding Table

Phenomena investigated

Within the focal practices shown in table 3-11, the study investigated:

• Processes by which participants are recruited into e-carclub PSS practices

- Processes by which e-carclub PSS proto-practice become (or not) an established practice
    - Competences participants must acquire
    - Meanings the practice is appreciated with
    - Materials participants use (e.g. what type of EV do they use, e.g. passenger car Vs van)
    - Processes of integration of the elements of the practice
- Processes by which participants lapse from e-carclub PSS practices of personal transport
- Processes of integration of e-carclub PSS practices with other practices of personal transport

Narratives of practices by participants are considered a valid alternative to the direct observation of practices (cf. Halkier and Jensen 2011, Bueger 2014).

3.5.4 Quality

Copies of recordings and transcripts are securely kept, backed up and available for reference as an audit trail as recommended by Robson (2011). Coding by means of NVIVO enables all data to be promptly retrievable and auditable, which assists credibility (Hoepfl 1997). The coding process can be readily tracked independently by an individual sufficiently skilled in NVIVO or presented by the researcher. This recording documents a comprehensive data analysis as recommended by Silverman (2003). This produces traceability, which can document quality (Golafshani 2003, Marshall and Rossman 2016). Data segments (citations) were used to document credibility (cf. Hoepfl 1997). The NVIVO files include full transcripts, which can easily be inspected. The coding can be also replicated. Contrary and deviant cases can be documented in the analysis, which complies with the principles of refutability and constant comparison recommended by Silverman (2003) and supports credibility (Seale 1999, Robson 2011, Marshall and Rossman 2016). In addition, NVIVO allows instant verification of the number of times a theme recurs in each individual set of data (Silver and Levins 2014). This means that data can be easily tabulated, which can document accuracy of the analysis (Silverman 2003). As the researcher interprets data, memos in NVIVO are linked to the codes by hyperlinks. It is therefore possible to reconstruct (and replicate) what data

generated which insights. In short, the data are stored in the NVIVO files in such a way that they are easily retrievable and reliability can be demonstrated, ensuring that no part of the study suffers from the anecdoctalism Silverman (2003) warns against.

3.6 Research limitations

In order to understand the limitations of the study fully, it should be remembered that both CCT and PT are cultural theories (Reckwitz 2002, Arnould and Thompson 2005) that belong to a constructivist tradition of explorative, descriptive research. They therefore do not offer explanatory outcomes. This means that any findings would be mainly relevant to the cultural milieu in which the research is conducted, in this case the national culture of the UK – but also the specific subculture of the context of investigation. These limitations are intrinsic to the research approach and have been dealt with in Chapter 2, sections 2.3.3. The sections below explicate the limitations of this research project.

3.6.1 Practical limitations

Both case studies are small scale, REBUS being based on 32 interviews and e-carclub on 19. There are specific limitations to both and they are as follows:

- In the REBUS case study, participants were recruited from the NCT membership. This introduced some bias in the result, because members of the NCT tend to have high income and education background, furthermore they are disproportionately from a white background. This limitation was known at the outset; however, the benefits the NCT could grant in terms of access to participants more than offset that consideration. On a positive side, the fact that the research was conducted in the UK meant that participants were more culturally diverse than if they had been from an EU country, because the UK population is comparatively more heterogeneous than most EU countries.
- At the time of working on REBUS, the theoretical framework and the methods used were at the early stages of design. For example, as mentioned above the interview guides integrated questions driven by PT and those driven by CCT.

- The limitation of the E-carclub case study was that the access was problematic and resulted in three subsets of participants. Considering the split between experts (members) and non-experts (non-members), the samples are small.

- The small size of the samples, e-carclub in particular, might be more problematic because, following Lincoln (1995) and Seale (1999), it may limit credibility and transferability by reducing the number of "voices" that can be heard by simply having a small number of participants.

- The case studies offer a "snapshot" of the relationship between consumers and PSS, rather than a study of how this changes over time. It might well be that as these participants continue accessing the PSSs for their needs, this relationship changes. This is a limitation common to both surveys and topical interviews. A possible way to gain a longitudinal view could be ethnography, where a researcher is embedded in a community of PSS users (cf. Silverman 2003, Marshall and Rossman 2016). If the researcher was embedded as a complete participant over time in a longitudinal study, then perhaps variations in the relationship with PSS, including successful embedding of PSS, could be observed. An alternative could be to repeat the observations at a later stage, for example to revisit the same participants or similar participants to explore changes to their views and practices. However, this is beyond the scope of this PhD.

- Another possible limitation lies in the possibility of bias generated by either the researcher's interpretation or participants' responses being conditioned by social acceptability, i.e. what they perceived to be the response expected by the researcher or bias (Silverman 2003) which would be a threat to credibility. This is particularly risky when topics discussed in the interview include environmental protection (Peattie 2001, Catulli and Reed 2017). As described earlier, measures were taken by the researcher to address this by ensuring traceability by recording and documentation of data. In addition to this, observations conducted based on PT may reduce this bias because they record what people do rather than what they say (Bueger 2014). Finally, the comparison of findings between case studies may help address this problem.

3.7 Summary

The methods used in this study were aligned with a constructivist approach through two consumer studies perspectives used in parallel. The research strategy involved two separate case studies conducted sequentially. Since the research was conducted by a single researcher, CCT and PT based analyses were applied in a pluralistic fashion sequentially as recommended by Blaikie (1991) and Fielding (2012). The next chapters 4 and 5 report the findings from the case studies, whilst chapter 6 discusses the dialogue between CCT and PT based on the elite interviews and focus group conducted.

4 REBUS Case Study

4.1 Introduction

This chapter reports the findings of the *Re-engineering Business for Sustainability* (REBUS) case study. REBUS was introduced in Chapter 3 and it explored PSS consumption. As noted in 3.2.5, the opportunity was taken to collect additional information from this DEFRA project through consumer interviews for this PhD research. The REBUS project focused on consumption of infant care equipment, in particular strollers (prams/buggies) and car seats. Following Mont et al. (2006), strollers and car seats are suitable for PSS as they are durable, with a possible life cycle of 10 years and yet they have a useful life for a single family of 1-3 years. They can be relatively costly, so families of modest means are not able to afford high specification products, which are desirable for their safety and quality. This puts these families at a disadvantage (Williams and Widebank 2006) and for products such as car seats, resale for reuse is discouraged by expert advice disseminated by the NHS and other information sources. According to Mont et al. (2006) this results in a large number of car seats and strollers being manufactured and the early disposal of perfectly usable car seats contributing to unnecessary waste.

Throughout the chapter, the term "PSS offering" is used to identify the service provided by the REBUS PSS. There is, however, a technical and terminology issue about the use in PSS research of words such as "rental", "rent", "lease" and "subscription". Rental is where a user is granted use of property, machinery or equipment for a short term in return of a payment or series of payments (Oxford Dictionary 2012). From the legal point of view, the PSS offering can be considered a lease, where the provider grants the lessee use of property, machinery or equipment for a payment or series of payments at a fixed rate for a longer specified period (Ibid.). The child car seat and stroller manufacturer Dorel uses the business model term "subscription".

Researchers in the context of a PSS offering use these various closely-related terms. Although in this chapter, the term "PSS offering" will be used for the service provided by the REBUS PSS, the terms "rental" and "rent" are at times also used because:

1) rental and rent are terms used by the PSS provider and by participants in interviews and

2) The term "rental charge" is used to indicate the fees paid by the users to use the car seats and strollers.

The chapter first outlines how the REBUS PSS operated, then the interviews with REBUS participants are analysed first through the lens of Consumer Culture Theory (CCT) and then Practice Theory (PT). The chapter concludes by discussing the insights provided by each perspective.

4.2 Description of the PSS and supporting artefacts

The REBUS pilot PSS started in January 2014, when the rental service was advertised on the NCT website, from which it was promoted, see figure 4-1 for an example.
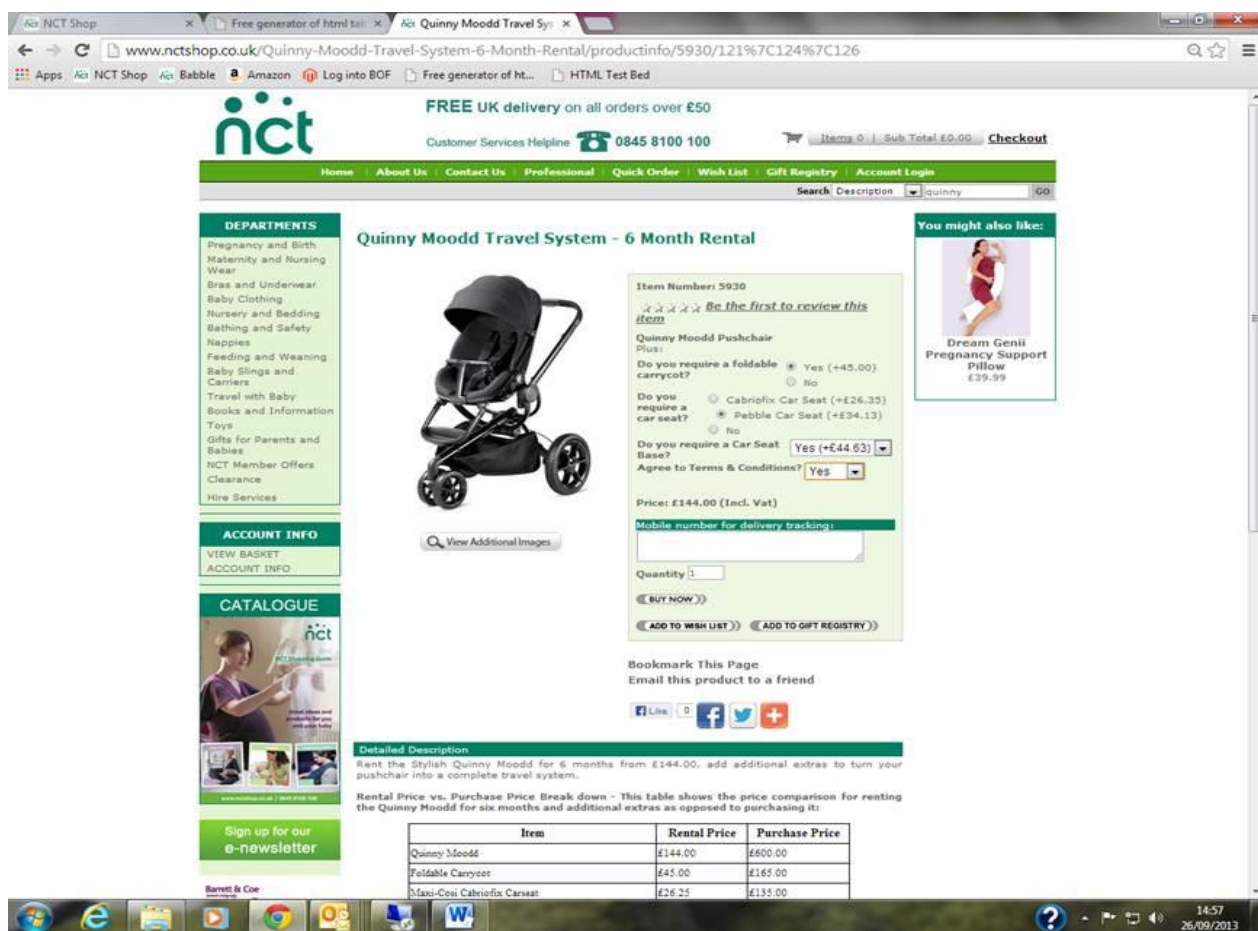
Source: the author

Figure 4-1 Screenshot of REBUS offer

The PSS offering consisted of a range of strollers, car seats and carrycots supplied individually or integrated on a unique frame as a travel system, with the result of reducing the number of products families needed to use. Increased diffusion of these integrated travel systems is a "socio-technical" dynamic of the market.

In the PSS offering, each product or combination could be rented for a unit period of six months – which could be extended. For example, a *Quinny Mood* travel system was offered as a six-month rental of £144 compared to £600 if it were purchased. Sub-units could be rented separately, e.g. a *Maxi-Cosi Cabrifix* car seat would be available at £26.25 and a *Quinny foldable carrycot* could be rented for £45 for six-months. The PSS included delivery and collection. When the rental period ended, unless the customer had renewed the rental, a courier would collect the item for return to Dorel's warehouse. At this location, Dorel used an advanced workshop to refurbish products that were subsequently re-delivered to the next PSS customers. Delivery and collection were important components of the PSS as they afforded convenience and saved effort. The collection saved parents effort to dispose of the product and limited waste.

The use of car seats is a legal requirement for the transport of infants in cars. Car seats need to comply with UNECE Regulation 44 and Regulation 129 relating to restraining devices for child occupants of power-driven vehicles (Child Restraint Systems). Pushchairs and strollers need to comply with standard EN 1888:2012 or BS EN 1888: 2003. It is necessary to test these products in a laboratory to ascertain the conformity of these products to regulations. For example, correct working of primary and secondary locking devices and the condition of the safety harness must be ascertained. The harness should be a secure five-point harness. Other components that need checking include wheel security and parking brakes. REBUS was designed with a refurbishment process in a service blueprint, which featured a full inspection. Figure 4-2 represents the PSS service blueprint.

It is notable that the REBUS PSS service not only provided quality control but there was a partnership with the NCT and use of their sales interface.

REBUS PSS Service Blueprint

Back Office

Reviewer (University of Hertfordshire)

Suppliers

Warehouse

Management

Refurbishing & Packaging

Quality Assurance

Management

Dorel Customer Service

Dorel Offices and warehouse (2 sites)

Marketing

Marketing

Line of Visibility

NCT Offices

Dorel Brand Meanings

NCT Customer Service

Reverse Logistics

Direct Logistics

NCT Brand Meanings

Certification of Quality Assurance

Sales Interface Through NCT Website

User

Front Office

Figure 4-2 REBUS PSS Service Blueprint

From the legal point of view, a PSS involving lease of goods for longer than three months to the same consumers is a *consumer hire business* and the

operation of such a business requires a Category B Consumer Credit Licence (OFT 2008). The Consumer Credit Act 1974 regulates long-term rental or leasing of products for more than three months (Ibid.). Providers of such rentals need to acquire a Consumer Credit Licence, so the implementation of some types of PSS by businesses would require them to obtain such licenses.

A distinctive feature of infant products is that they have a short useful life because of rapid infant growth. The drop in the UK birth rate compounds this. The average number of children per woman has fallen to 1.85 (bbc.co.uk, 2014) and with many families now having only one child, there are less opportunities for multiple uses of infant products.

Overall, infant products are increasingly likely to be scrapped rather than reused. Institutional bodies, such as Health Authorities, educate parents about possible health risks from pre-used products. One example is *Sudden Infant Death Syndrome* (SIDS), also known as cot death (www.nhs.uk), which can occur in car seats, due to respiratory problems (news.bbc.co.uk). Interference with the infant's spine development is also associated with car seats and pushchairs. The BPA and other organizations discourage the use of pre-used and second-hand products because they might be damaged and thus unsafe (Baby Product Association, 2014). These directions from expert bodies strengthen the use of new, owned products (Madeformums.com, 2015; Mumsnet.com, 2015; bbc.co.uk, 2015) and therefore could be a barrier to PSS adoption.

As was previously noted for strollers, the 6 months rental price for car seat products is considerably lower than their purchase price. Table 4-1 below compares prices for the purchasing and the PSS options for some of the components

Item	Rental Price (6 months)	Purchase Price
Quinny Moodd	£144.00	£600.00
Foldable Carrycot	£45.00	£165.00
Maxi-Cosi Cabriofix Car Seat	£26.25	£135.00
Maxi-Cosi Pebble Car Seat	£34.13	£165.00
Family Fix Base	£44.63	£165.00

Source: Dorel Ltd

Table 4-1 PSS Vs purchase comparison

In the period between January 2014 and December 2015 (when the pilot concluded), a total of **892** physical products had been allocated to parents, of which 827 were car seats and car seat bases and 65 were strollers. Several products were allocated multiple times. 183 were allocated two or more cycles to the same sets of parents, so in total, **1048** "accesses to use"[5] were achieved, made up by access to 672 car seats with 251 car seat Isofix bases[6], 56 carrycots and 59 strollers and accessories. Table 4-2 summarizes these statistics.

Total physical products	892
Car seat and accessories	827
Pushchairs	65
Total accesses to products	1048
Products used accessed in two cycles	182
Products used accessed in three cycles	30
Products used accessed in four cycles	8

Source: Dorel Ltd

Table 4-2 Summary statistics of REBUS pilot accesses to products

Car seat PSS represented a larger proportion of the total rental volume, with 923 accesses to 827 car seats/ Isofix car seat base combinations. Thus, the pilot had a far greater uptake for car seats than for strollers, with the latter representing just 7% of the accesses. This disparity is notable and the exploration of the case study attempted to identify aspects that led to this.

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[5] The number of times the products have been issued to parents
[6] An Isofix base is a device which is fixed to the car seat and on which an infant car seat can be fastened with a quick release coupling.

Figure 4-3 summarizes the breakdown by volume of products, as recorded by the NCT. Each of the items had to be ordered from a drop-down menu.

Product Type
by volume
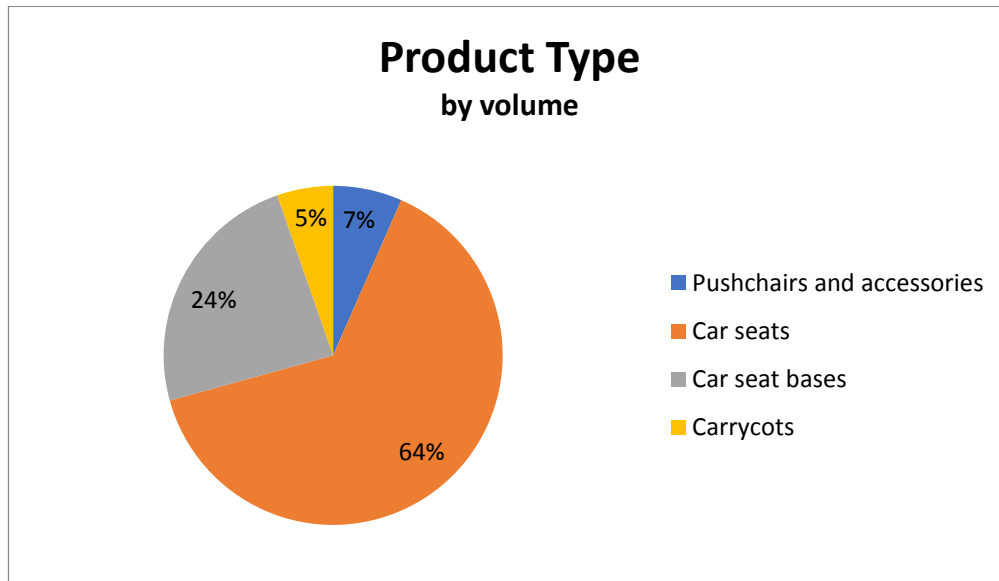
Source: The NCT

Figure 4-3 Breakdown of REBUS pilot product type by volume

The pilot lasted for approximately two years. The data collected for the study have been analysed through Consumer Culture Theory (CCT) and Practice Theory (PT), defined in Chapter 2. As seen in Chapter 2, Shove (2010) claimed that individual approaches focusing on consumer choice are not suitable to research sustainable consumption. Despite favourable disposition of individuals to consume sustainably, which could be researched investigating favourable attitudes (Kalafatis et al. 1999) or values (Piscicelli et al. 2015), consumers fail to do so because they are obstructed in doing so by social-structural factors (Shove 2010). For example, a consumer might be very well disposed towards waste limitation and food recycling at home but then be a frequent flyer to pursue their professional or leisure activities (Warde 2017). Whitmarsh et al. (2011) objected that individual choice and responsibility are important. The analysis in this chapter provides a way to explore these different views. The next section reports the findings from the interviews conducted within the REBUS case study as part of this PhD. The report is divided in two separate sections, the first adopting CCT for the interpretation, the second PT. The reason for this sequence is to explore an individualist approach first and the utility of the choice view and then investigate possible failure to take up the PSS offering despite an apparently favourable choice using a social-structural view.

4.3 Consumer Culture Theory view

As explained in Chapter 2, CCT is a socio-cultural perspective with a wide range of ontological objects. It focuses on how identity construction and the meanings and ideologies linked to it drive individual and group consumer choice. Following Bardhi and Eckhardt (2012), who conceptualized an offering akin to use orientated PSS as *access*, defined in Chapter 2, the PSS offering provides access for use to infant car seats and strollers for a period. The analysis through a flexible template approach placed the data on infant care PSS across the six dimensions of access based consumption described in Chapter 3.5.2.1, Table 3-8 (Bardhi and Eckhardt 2012). These dimensions are temporality, anonymity, market mediation, consumer involvement, type of accessed object and political consumerism. The analysis progressed through coding of the qualitative data in themes. These themes were allocated in sets in the NVIVO file and each of the six dimensions represented these sets. This process was outlined in Chapter 3, section 3.3. The sets were then analysed further and the analysis revealed five outcomes, which reflected consumer responses to the PSS:

1) Partial identification with accessed product

2) Interplay of use and symbolic value

3) Quality assurance and co-branding values

4) Co-branding effects on brand community membership

5) Addressing risk and trust

4.3.1 Partial identification with product

The notion of consumption without ownership is central to result and use orientated PSS (Tukker 2015). However, consumption without ownership is viewed as problematic in western cultures, as the benefits of ownership such as product control and the perceived welfare which flows from ownership in and of itself are highly prized (cf. Schrader 1999, Tukker and Tischner 2006, Tukker 2015). Although this presents a significant challenge to PSS uptake, ownership is a complex phenomenon and a perceived sense of ownership can arise even when formal ownership rights are not transferred to consumers (Peck and Shu 2009, Belk and Llamas 2012). As seen in Chapter 2, section 2.2.2, consumers can appropriate and identify with products without actually owning them.

However, this phenomenon is far from straightforward. Exploring access-based consumption through a case study of Zipcar, Bardhi and Eckhardt (2012) argue that a sense of ownership does not always arise in access-based consumption. In other words, consumers do not identify with the accessed object because they do not own it (Weiss and Johar 2013).

As has been noted, in the REBUS pilot, a higher proportion of participants accessed car seats than accessed strollers. Participants typically accessed car seats for 6 to 9 months and tended to view the purchase of these products as forced by legislation and for short-term use, so they were reluctant to purchase them. For example, one participant said:

"I knew I'd only be using it for six months so I didn't really even know if I wanted to invest in that money"

While another participant explained,

"...I really didn't want to put a lot of money in this car seat, so I was thinking hard, I mean, there must be a solution to this, I don't want to buy one".

This shows that participants saw the use of mandatory Group 0 car seats as not cost-effective to buy and therefore considered the car seat PSS a good offering, booked and consumed it. Even so, these participants were concerned about liabilities that might arise if they damaged the rented products. As one participant commented,

"I have to […] keep it in [a pristine] state [….], though I know that you can recondition it, it'd just be something that'd bother me, […] that I have to look after it more than I would if it was my own […] I'm not as free as I would be if it was mine".

Product stewardship is therefore partly sought to avoid penalty when returning the product, as another said,

"I'd be worried if, […] I really damaged it or got it scuffed […] it's all very well saying, "Oh I'll clean it," but cleaning it won't get rid of all the scratches"

Thus, users felt responsible for product integrity. Participants even worried about conserving the product's packaging,

"I'm so paranoid about the box, I've got it in a cupboard on its own…"

However, marketing communications hosted on the NCT web site for the PSS did not emphasize penalties for damages. These concerns came from the users themselves. This led to a related concern about endeavours to personalise products such as applying stickers to them. CCT indicates that personalisation and customization, defined in Chapter 2, section 2.2.1, engender emotional attachment to products (Mugge et al. 2009). The focus in CCT is on their role in enabling identity construction of individual participants and the individual, emotional feelings of participants aroused in these processes. Consumers use products to construct their identity through customization and personalisation (Schouten and McAlexander 1995). Infant care products have an emotional quality because of their role in signposting important stages in consumer lives, i.e. liminality, the quality of disorientation that occurs in the middle stage of rites (Thomsen and Sørensen 2006). Liminal phases create discrepancy between the real and ideal self, for example in the transition into parenthood (Ibid.). Liminal consumption helps consumers to reconstruct their identity by providing the right accessories (Ibid.). This makes processes of personalization important to customers. Yet participants are reluctant to customize or personalise the PSS infant care products, as they do not want to damage them and because of concerns about contractual liability to the provider.

Participants did identify with the PSS, as they were happy to be known as car seat renters in various online forums and to share information and details of their practices

"*one of the mothers in [a] chat room, I think it was a Netmums chat room, said that she just rented one [a car seat] from the NCT, so that's how I found the NCT*"

Another participant shared information on the infant care PSS with her NCT course colleagues,

"*…. the people at the NCT antenatal class, I sent them all [a message] saying, "you know, "This is what it is, we've gone for this..."*"

Bardhi and Eckhardt (2012) claimed in their study that USA Zipcar users wanted anonymity rather than being identified as Zip Car users. In other words, they wanted to avoid identification with the accessed cars as well as with the service. REBUS' interview results indicated lack of identification of participants with *physical* products accessed through the PSS offering. However, in contrast with

the Zip Car case, there is some evidence that, for infant car seats, the participants identified with the PSS offering, the service itself. To some extent therefore, participants appropriated the PSS offering in their extended selves.

For strollers, however, the way participants identified with the PSS offering, including the service aspect, was more complex than for car seats. Participants said that they used strollers for longer than car seats and therefore they are worth owning. Furthermore, a stroller is an object of more public consumption than a car seat. Whilst a car seat is kept fastened in a car out of sight, a stroller is seen by all the parents' social connections and parents worried about social disapproval. Strollers come in various types and brands and parents see them as liminal goods, which help the construction of identity of new mothers and symbolize the transition to motherhood (Thomsen and Sørensen 2006) and as status symbols (Ibid.). Seen this way, access to strollers for use through PSS seems problematic. As Anna says, she is

"…. *kind of enjoying the preparing for the baby bit. And so I think that we think the pushchair is a bit of a kind of status thing of, "This is mine." And it's the first time that we've had to choose one and it seems very exciting as a kind of purchase and I think it would seem different therefore if we were renting it".*

Therefore, whilst for car seats many participants were favourable to access through the PSS offering, they seemed to prefer using their own strollers rather than accessing them through PSS. This mirrors the better uptake of car seats in the pilot. Interestingly in a case where a participant has decided to access a stroller for use, Ashya was conflicted,

"*I think there's a little bit of stigma attached to, oh it's second-hand or can she not afford it kind of thing. The area that I live in, in Chigwell, everybody has the latest things and everybody has new things and it's, I don't know, maybe I feel like they'd look down on me for having rented or second-hand things (….), so that I don't think I would tell people that I'm renting".*

Therefore, parents may not want to be known that they access the PSS. Participants also want to be free to personalize their strollers. As Sarah says,

"*Some people that I know, yeah, take their pram quite seriously, you know, "This is mine and I want this colour and I want this pink one for my little girl"*".

As Amanda claims

"*…we always use the wrist-strap when jogging…we often switch who's pushing the buggy mid-jog to share the effort, so being able to easily change the handle bar height was important*".

This indicates that strollers are a more crucial product for appropriation. Participants seem more likely to identify with strollers they own, therefore for strollers, data confirm Bardhi and Eckhardt's (2012) claim that consumers do not identify with accessed products. However, this research shows that the type of product is important in shaping PSS consumption.

4.3.2 Interplay of functional and symbolic value

Consumers extract various kinds of value from products and services. For example, consumers extract functional value, which is the consumers' evaluation of consumption based on what the product achieves in use (Babin and James, 2010). Bardhi and Eckhardt (2012) propose that Zip Car subscribers use the cars they access to travel for specific purposes, such as shopping or transporting goods for DIY. This means that they have a utilitarian relationship with the PSS. Access based offering of cars therefore delivers mainly functional value to consumers. This is in line with the claims of most PSS literature (see Chapter 2) that PSS delivers mainly functional value to users.

Similarly, the REBUS case study shows that the short-term use of car seats led participants to have a somewhat instrumental relationship with them, being interested in the specific function of driving their child around. Most participants seemed to rationalize their decision of accessing rather than purchasing car seats in terms of cost relative to time,

"*I wouldn't (want to) have to pay £150 for something I'd only use for a few months and then get rid of [it]*".

Participants therefore saw a short use interval as a reason to access products through PSS rather than purchasing them (cf. Behrendt et al. 2003, Armstrong et al. 2015). For example, car seats which are only suitable for infants of ages between 0 and 9 months, called "group 0", were seen by participants as better

accessed through the PSS offering than purchased. Users of car seats had a utilitarian relationship with them since car seats are mandatory to drive a car with an infant on board. Participants therefore seemed to extract functional value from the PSS offering.

However, some participants also attributed symbolic value to the PSS. For example, by accessing car seats and strollers through the PSS, participants were able to afford higher specification products than if they had to purchase them new. This delivered symbolic value helped construct their image.

The meaning of cost effectiveness was a key theme in the participants' narratives. One participant explained this as better financial management. By accessing the car seat via the PSS, she would save money, which she could spend one day to educate her child. She said that she saw accessing the car seat via the PSS as a smart solution to make better use of her money. Other participants thought car seats would depreciate quickly, which led them to access a car seat through the PSS

"The car seat was a particular stress for me because (it) is un-saleable, well, it depreciates very heavily…"

From these narratives, it appears that the participants made choices motivated by cost effectiveness. In contrast, some users of the products seemed motivated by altruistic meanings and socially responsible attitudes including care for the environment. They therefore sought to extract social value from the PSS. As the following statement shows,

"…. if you could rent something for the term that he needed it and then pass it onto someone else, it seemed to be more ecologically sound, it seemed to be just a better practice that instead of (being) the only one who needs the thing and you only think in isolation of what you need, (…), what do you do with it when you're done with it, after six months?"

This contrasted with Bardhi and Eckhardt' (2012) claim of anonymity of PSS like offerings. These participants identified with environmental benefits. For example, one participant, by using the PSS, was attentive to recycling and reducing waste and argued that renting equipment would help achieve these goals as other parents could subsequently access the products. The environmental benefits of the PSS were important to other participants, who enjoyed hiking in the natural environment,

"…to some extent, environmental friendliness. (….) I think it's efficiency more than sort of environmentalism itself. It's sort of the feeling that efficiency is better."

Two Canadian participants stated that the environmental appeal of the PSS was clear to them. They commented that the Canadian education system teaches environmental principles and this, together with their upbringing, makes them particularly sensitive to environmental issues. One participant said that the fact that car seats cannot be easily resold means that they may be destined for landfill. Another thought that purchasing new products is wasteful and therefore she opted for the PSS. Another was against product proliferation and waste.

"I don't want to have, in the environment, loads and loads of products that are actually still usable and they haven't come to the end of their life, so that's the main reason. (…) there must be a mountain of car seats in this world…"

Some participants simply did not like owning material goods. In such instances, participants viewed the PSS offering as a good way to avoid accumulating "clutter" in the home and waste. One participant stated that she does not

"…like clutter. So hiring things, for me, makes a lot of sense 'cause you just have something for as long as you need it… I'm not keen on owning lots of things".

These participants seem to correspond to the consumer types that Craig-Lees and Hill (2002) call voluntary simplifiers, as explained in Chapter 2.2.2. The idea of spending money on and allocating space to products which are only used for a short time and may be sent to landfill makes purchasing car seats or even strollers appear unsustainable. This is the case particularly if they think they will have only one child and therefore cannot extract value from the product across two infants. As Catherine and Ross explained, since they are not sure whether they would have another child,

"…we've not really got a lot of room to store things (…) so (…) renting, great, use it, look after it within the terms and conditions but then just hand it back and forget about it".

This of course might be in line with the trends of mothers giving birth in later life and of families having only one child. Participants also argued that sharing

products among more than one family allows people to access good quality products, which they may not be able to do if purchasing these goods new. In some instances, participants' view of sustainability included social as well as environmental concerns. The participants said that they believed that by taking up the PSS offering, which they saw as an initiative by the NCT, they would contribute to the cause of the NCT, a charitable organization, by contributing to their fundraising. They saw this as an opportunity to help other people the NCT caters for. This can be considered a meaning of community value (cf. Briceno and Stagl 2006). Meanings of health and safety are associated with infant products. For this reason, participants were very interested in the PSS' quality assurance process and explained that the QA certificate issued by the NCT was a decisive factor in their decision to take up the PSS offering.

Nomadic consumers (cf. Bardhi et al. 2012), described in Chapter 2.2.2, who engage in global nomadism, have a different view of product value. Nomadic consumers are often high net worth individuals on high income who travel and relocate frequently, for example for medium term work contracts (Ibid.). Nomadic consumers have a "liquid relationship to possessions" (Ibid. 511), are thought to form situational attachments to objects and appreciate them primarily for their instrumental use-value. These consumers value immaterial or light goods (Ibid.). A few participants' interviews exhibited nomadic qualities. They were individuals working on temporary contracts and on high income, some were Canadian or EU citizens and did contract work in ICT or in the medical field or were researchers. They were more likely to be receptive to PSS. As Susan and John said,

"…*we needed it for that amount of time… and it seemed, it was a cost-effective way of having the thing for the amount of time that we needed it.*"

This type of consumer is interested in the functional and situational value; the value provided by an object only in the cultural context in which it is deployed (Bardhi et al. 2012) and they are concerned with weight and materiality of possessions (Ibid.). As Charlotte explained,

"*I didn't want to have a lot of clutter, you hear a lot of people who have children and they end up at the end with all the stuff they need to get rid of and we specifically wanted to try to not have that much clutter, just get the minimum of what we needed, because it's so easy to go overboard.*"

Of course, grandparents or siblings often gift prams and strollers (Thomsen and

Sørensen 2006). However, the tendency of consumers to relocate far from their city of birth means that they tend to purchase their own strollers. In contrast with car seats, consumers demand far more symbolic and hedonic value, defined in Chapter 2, from strollers. Consumers select these products depending on their fashion value and ability to convey status (Ibid.). Mothers and fathers are both anxious to appear as good parents and to be doing the best for their infant. Amanda for example, who happily rented a car seat, said about pushchairs

"…. *but I am also aware that certain people will judge and I'm a little uncomfortable with that, they say, "Oh, you're not doing your best for your baby, you're buying things that are old and falling apart."*

Here the participant expects symbolic value projecting meanings of pride to be a competent parent. For Beverley, the stroller also delivers social value, as she explained,

"*…when I meet another (…) expectant mother, I'm asking, 'So, have you bought your pushchair, what pushchairs are you looking at?' It's like a really interesting thing to discuss, what everybody's views are*".

Most participants therefore prefer to purchase their strollers and even retain them after the child has grown because of their symbolic, liminal value. It appears therefore that consumers look for symbolic value in products which are of public consumption (Ibid.) such as strollers, which PSS is not able to deliver.

In summary, this outcome reveals a complex interplay of functional and symbolic value in PSS consumption. Consistent with PSS literature, functional value is sought and cannot be ignored. However, symbolic value – with PSS imbued with meanings of cost effectiveness and affordability, health and safety, parental pride and competence, was also observed. Bardhi and Eckhardt (2012) claimed that consumers could not extract symbolic value from access-based consumption and some PSS literature (cf. Tukker and Tischner 2006, Scholl 2008) say the same about PSS. The case study shows that symbolic value supported by meanings such as altruism and environmental protection can be extracted from PSS consumption of infant car seats. This is in line with Belk's (2014b) proposition that access based consumption can deliver symbolic value and assist identity construction, "you are what you can access" (Ibid. 1598).

With products that have strong symbolic attributes such as strollers however, the artefact itself is an item of consumption in a social context. Strollers have symbolic meanings and features, which are vital to address the liminal phases in the lives of consumers and as the interview data showed, they generate considerable emotional attachment. As Weiss and Johar (2013) state, ownership of the artefact is essential for consumers to identify with these products. This may perhaps explain the lower uptake of strollers in the trial.

4.3.3 Quality assurance and co-branding values

Accessing infant products through a PSS means that these products may be pre-used. Research indicates that in general, consumers are unsure about the quality of pre-used products (Michaud and Llerena 2010, Catulli and Reed 2017) and may associate them with deprivation (Williams and Widebank, 2006). Consistent with these notions, data show that participants do not trust previous users of these products, as they feel they may have damaged them. Trust was defined in Chapter 2.2.3 and participants were concerned that car seats, for example, may have been involved in car accidents. In addition, meanings of contagion (cf. Bardhi and Eckhardt 2012) were associated with the PSS offering because participants thought that the products might have been not kept in a clean condition. In general, these findings contrast with research on sharing of infant products among relatives and friends, which suggests not only that sharing is acceptable but it is also an important ritual (Belk, 2010; Thomsen and Sorensen, 2006).

With sharing between relatives and friends, there is an assurance of quality that is not present when sharing a product with an anonymous previous user. In the REBUS case study, issues associated with prior use of products were addressed by quality assurance of the PSS provider's brand and processes certified by the NCT. Documentation (including the person that checked it and other procedures) was provided to participants as evidence of cleaning and other checks that the provider had performed as part of quality control. A participant articulated the importance of this:

"The fact that it's been factory refurbished "is key, "…so we know that it's been safety tested. (…). I read all the terms and conditions carefully to ensure that it was taken back to the manufacturers and it was refitted to new standard"

while another participant also stated

"Well, we were wondering how we would know that it was safe, it came with a manufacturer approved label, so I was pleased with the safety testing"

In addition to evidence of quality control from the PSS provider, assurance from NCT's involvement in the PSS seemed to be sufficient to address participants' concerns.

"I would never buy a second-hand car seat but I would rent one from NCT".

"I thought it would be in good condition because it's coming from NCT".

"We didn't think that they (NCT) would endorse something that was (not safe), (they) are not going to be involved in anything where they don't carefully look over before they give it out, make sure that when it comes back everything's fine and that was it…"

Other participants stated that they trusted the NCT but were less sure whether they would trust a PSS provided by a firm,

"I would never rent a car seat from just any company, with not knowing if it had been in a car accident, and the safety and all the reasons why second-hand car seats shouldn't be used, it was only because it was NCT that I would even consider it".

Thus, while the PSS is market mediated and provided by a profit seeking firm, the role of the NCT in promoting the PSS (via the web and in classes) cannot be overlooked. However, participants perceived this brand of car seats to be of high quality and sturdy as it received excellent reviews in the consumer magazine *Which?* and they specifically sought that brand. The combination of the credibility of the two brands is an example of co-branding (a concept defined in Chapter 2, section 2.2.1). Here a commercial brand combines with a charitable brand (cf. Bliss 1996, Till and Nowak 2000, Hamiln and Wilson 2004) and this reinforces the trust in the PSS offering. When selecting the PSS, participants seemed to draw upon the experience of their peers of the brands,

"My sister had a Maxi Cosi car seat as well, so it was just, it's personal experience, I'd seen other kids in my family have it and it's a reliable brand".

Therefore, the findings indicate that participants sought quality assurance from both the combined brands of the PSS provider and the NCT and their certificate of quality assurance. The status of the NCT as a non-profit charitable organization played a significant role in engendering trust in the PSS. Participants also noted that quality assurance arose from the service elements of the PSS, including customer service, accessories and adaptors, information and guidance on products' use and age suitability and insurance. Whilst for car seats participants found brands and certified QA reassuring that products were safe, in the case of strollers, the role of the brand seems to be more complex. Brands embody symbolic meanings and participants seem to think that there are brands they would want to be associated with and some less so. Some brands deliver social value and feelings of affiliation, so participants felt they belonged to a group. As Sarah L. said, talking about a well-known brand of pushchair she purchased,

"I think it's very common in this area, very popular, so I've seen them a lot, I've had lots of people tell me that they're great, (…) that's what everybody was telling me they had and they loved so that's why I got it and it looks pretty so (laughs)..."

On the other hand, some brands have the opposite effect and represent people that participants did not want to be associated with, as Chantal said,

"…. most people want, seem to want [a brand] there's kind of a slight stigma to [a brand] on another spectrum (…) it's really hard to say it without sounding like I'm being really horrible but (…) I don't like the word chavvy people but have the [a brand]".

In this respect, some brands seem to deliver a negative social value. This might mean that if a given brand with positive social value were not in the range of products offered through a PSS, then parents would reject the PSS. In fact, most participants who gave reasons in interviews not to subscribe to the stroller PSS stated that they were interested in a brand which is a competitor to Dorel. Brands embody meanings that give them a personality. For strollers, some brands become part of the parent's identity, as Kathy said,

"…it's part of you, like it's yours"

Therefore, brands create for strollers the effect that participants seem to become possessive of them (cf. Thomsen and Sørensen 2006, Catulli et al. 2013) and favour ownership. As Kathy said

"…. I would never have wanted to give it back is what I mean. (….) I think renting offers the chance for you to think, oh, this doesn't suit me anymore, I want to give it back. But equally, now that I know I've got the right one, I'd never want to give it back and I think, you know, it's probably going mouldy in my loft…"

Kathy revealed that she saw her stroller as a product which becomes part of her family and shares the transition between life stages

"I like the idea of having a pram that will stay with me, that will adapt for what I need. And I like the idea, you know, that it'll stay with us"

Here therefore we see that for pushchairs, unlike car seats, a brand comes to represent the constructed identity of the participant as a parent and is an emotional attachment (cf. Schrader 1999, Mugge et al. 2009). This seems to challenge the viability of use orientated PSS. For strollers, brand and constructed identity leads to a strong desire to own a stroller rather than accessing it through a PSS.

4.3.4 Co-branding effects on brand community membership

It was noted earlier that, in their study, Bardhi and Eckhardt (2012) found that drivers of Zipcars wanted to avoid identification with the PSS. They did not want to join or be associated with the Zipcar brand community. Brand communities, as explained in Chapter 2, section 2.2.1, are settings in which users feel social affiliation with other users through a brand and express loyalty to the brand and affinity with the community. However, data from the research reveal more of a mixed and complex picture than in the Zipcar case.

In Chapter 2 it was noted that co-branding offers benefits such as information sharing (Grossman 1997), decreased costs to enter new markets (Blackett and Boad 1999) and positive meanings from association with worthy causes (Bliss 1996, Till and Nowak 2000, Hamiln and Wilson 2004). Here these benefits seem to arise from the co-branding of the Dorel and NCT brands. The NCT is not only trusted for quality but also represents a community parents want to be

associated with. Participants viewed it as a place where parents share information about parenting practices (e.g. through antenatal classes provided by NCT to would-be parents) and seek other parents' views on, for example, the performance of various infant care products. With respect to the car seat PSS, one participant stated:

"I just saw (that) other women were going to be using a car seat for a short period of time and then one of the mothers in that (Netmums) chat room said that she just rented one from the NCT (…), and I'm already impressed with the NCT because of the courses that I'm taking, so I trusted the organisation and rented".

The NCT antenatal classes were not established as part of the PSS. However, since the NCT, which was the organization promoting the PSS, was also the organizer of these antenatal training courses, they helped generate a sense of community around the brand, which lent credence to the PSS. In general, participants expressed a strong sense of belonging to the NCT brand community. The PSS was perceived as sharing some of the meanings of that wider brand community. Participants viewed others in their antenatal class as peers with whom they shared tips and ideas about parenting. Debates about the rental of infant care products such as car seats formed part of these dialogues. Since the NCT is a not-for-profit organization and projects a "commercially disinterested" image, this seemed to make it more trustworthy. One participant stated

"There are a lot of forums online, you know, websites like BabyCentre and things like that. (…) and maybe our NCT class, we took the actual antenatal class. We meet up with them quite regularly"

while another stated that they sought other parents' opinions when engaging with the rental scheme but mostly she investigated rental on her own initiative,

"I just Googled 'using car seat for short period of time', even 'can I rent a car seat', I may have done that, but I think I first got tipped off to that chat room with other mums…"

Participants viewed the PSS promoted through the NCT as an initiative to benefit young parents, society and the environment. They felt that they were members of the NCT community and wanted to support its further development to achieve social and environmental goals.

"…you know that you're supporting a charitable organisation that has volunteers working for it, like you're just part of this, you're part of a great movement".

Twelve participants stated that their decision to adopt the PSS was influenced by their involvement in NCT antenatal classes. Thus, in contrast with Bardhi and Eckhardt (2012), data show that some users of infant care products see themselves as members of a brand community. However, an important distinction is that, in this study, it is a *co-brand* (Askegaard and Bengtsson 2005) community involving a charity and a firm rather than a commercial firm. Indeed, the "three defining core elements of brand community" (Bardhi and Eckhardt, 2012:13) are in evidence as:

1) shared consciousness of parenthood,

2) shared rituals linked to infant rearing and

3) a sense of moral responsibility towards their own children and the environment.

Data collected indicated that participants, who were going through a critical passage in their life, i.e. having a baby (cf. Thomsen and Sørensen 2006) shared solidarity with each other and the meanings associated with parenting. Participants who were first time parents wanted to share their experiences. This contrasted with the Zip Car drivers in Bardhi and Eckhardt (2012) research, who wanted anonymity and did not want to have contacts with other users. Importantly, however, the co-branding of the offering with the commercial and charitable brand has a decisive effect over the sense of affiliation the co-brand offered.

4.3.5 Addressing risk and trust

Consumers of infant care equipment find product selection difficult and may purchase unnecessary goods (Catulli et al. 2013). Parents often feel coerced by marketing companies to buy products which they worry may be unsuitable and are concerned about appearing incompetent (Thomsen and Sørensen, 2006). Participants claimed that the PSS enabled them to reduce the risk of buying

products which were unsuitable or not needed. This was because, the PSS offered the opportunity to try products out and return them if they were unsuitable. As it happens for car clubs, where consumers can try a vehicle and then purchase the same model if they so wish (Cherubini et al. 2015), with the REBUS PSS, the participants could rent a model of stroller which they then could have purchased from a traditional retailer if they so wished. As Amanda explained,

"…so you could use [renting] to see if you were happy with a big purchase before spending a lot of money on it".

Indeed, a PSS working like a subscription to a service that seamlessly integrates different items (products and services) at various stages of the infant's growth could be helpful for participants, by minimizing both the risk of overspend when buying new products from commercial companies and buying incomplete or damaged second-hand products from other parents.

As seen in Kozinets and Handelman (2004), several participants in the study also commented that they did not trust marketers as they coerce new parents into buying products they do not necessarily need (Thomsen and Sørensen 2006). Thus, the case study revealed that consumers did not trust conventional commercial companies as suppliers of infant care products. For some participants, this seemed to have given rise to political consumerism: participants selected the PSS as an alternative to buying infant care products that they felt they might be coerced into purchasing. As Chiara explained,

"…. there is a lot of pressure on buying baby products (…) everybody's, really, puts a lot of pressures on you, (you) can think on any kind of product, really, from buggies to clothes, to changing tables, to everything. There is a lot of pressure that you need to buy something, you need to (….) (it is) just pressure that people, or the markets, or companies, are putting on you, but it's not true that you need anything, everything, at the same time, look at Bounty (a company marketing infant products), there were people working for Bounty in the wards, (….) they were quite pushy in selling".

Thus as in Kozinets and Handelman (2004) these participants resented marketers' hegemony at their time of vulnerability. As the infant products PSS is partly delivered by what is perceived as a not-for-profit provider (NCT) this

represents a real alternative to both products purchased by commercial companies and PSS market mediated in for profit markets.

4.3.6 Summary

As mentioned in Chapter 2, Tukker (2015) claims that PSS is not successful in uptake because it does not enable consumers to control products, so they prefer ownership. This view of control is part of an individual choice view of consumer behaviour (Chen, Lee, and Yap 2016, Cutright and Samper 2014, Hamerman and Johar 2013). CCT based analysis of interview data revealed aspects of individual and group choice and behaviour following Whitmarsh et al. (2011). A number of aspects revealed far greater complexity than Tukker's (2015) reductionist claim. In table 4-3 below, the results are compared to the claims of the substantive and supporting literature reported in the thesis.

Literature claims	Results
Consumers politically engaged with environmental awareness were more likely to take up sustainable consumption (Moisander and Pesonen 2002). Consumers resent marketers' hegemony and adopt anti-consumerist behaviours (Kozinets and Handelman 2004). Nomadic consumers, defined in Chapter 2, are more likely to limit the number of the items they own (Bardhi et al. 2012).	Participants who took up the PSS offering shared identities and characteristics. Some expressed political views connected with environmental awareness or anti-consumerism. Some sets of parents were older and not likely to have more than one child. A few participants could be classified as nomadic consumers. In both cases they had a pragmatic attitude to the PSS offering
Parents have special relationship with infant products, especially strollers, which have liminal value as they have a role in their identity transition to parents (Thomsen and Sørensen 2006). Parents prefer to use their own strollers (Catulli et al. 2013) Relationship of parents with infant car seats is pragmatic and they see it as a product which they have to use (Ibid).	Relationships of consumers with products shaped PSS consumption. Because of the emotional character of the consumptionscape, childbearing, participants revealed emotional relationships with strollers. They felt affinity and attachment to products and wanted to be able to adapt them to their needs. This possessive relationship would challenge PSS. This relationship differed significantly between strollers and car seats. Whilst car seats are products parents need to acquire for legal reasons if they drive their child around (NHS) and invite a utilitarian relationship, strollers are more discretionary items
Consumers appreciate functional value delivered by PSS (Giarini and Stahel 1993, Mont 2002, Manzini and Vezzoli 2003, 2005). PSS is not able to deliver symbolic value. Products that deliver symbolic value are not suitable for PSS (Tukker and Tischner 2006, Scholl 2008).	Participants did not identify with products but attributed symbolic value to PSS *offering* of infant car seats. Not all participants identified with PSS offering of strollers and mostly preferred using their own.
Parents are concerned with health and safety associated with infant products (Banister et al. 2009, Catulli et al. 2013)	Health and safety were important meanings for both products. In the car seat case in particular a quality assurance process and certification were necessary to make the PSS offering acceptable
Consumers do not identify with a PSS brand and do not feel part of a PSS brand community (Bardhi and Eckhardt 2012)	Affinity with co-brand community was essential for acceptance. Participants stressed importance to identify with a community meanings brand which gave them a sense of belonging to a group of peers

Table 4-3 Result of CCT analysis compared with literature

Whilst a minority of participants had taken up a PSS offering including both car seat and stroller, the majority, despite the stated interest in the social and environmental benefits of the PSS offering only took up car seats. This different choice could be explained with the more symbolic connotations of strollers (Thomsen and Sørensen 2006). Often participants rationalized their choice with the view that strollers are used for longer than car seats. This may be a fair justification and yet strollers are still products which are used for a shorter interval than they are designed for (Mont et al. 2006). The next section therefore

explores whether PT offers a view of how the poor uptake of the PSS offering of strollers can be explained by social-structural factors.

4.4 Practice Theory view

In contrast with CCT, which focuses on individuals and their choices, PT, defined in Chapter 2, focuses on socially established practices. These are shaped by social convention, structural aspects and by how they are performed, by the links between elements within the practice and the links between the focal practice and other practices (Mylan 2015). The focal practice is *transporting infants safely and comfortably and providing for them a safe and comfortable place to sleep or play*. In REBUS, participants were asked to perform a modified focal practice using materials (infant car seats and strollers) provided through the PSS offering and therefore not owned. Following Shove et al. (2012), this novel practice is called proto-practice, as was defined in Chapter 2. Participants were also asked to defect from the traditional focal practice because:

1) Practices are collective and shaped by social conventions, defined in Chapter2, section 2.2.4. Although the participants might be new parents, they would be still breaking from the social convention of owning infant products.

2) In some cases, participants were already parents having a second infant, so they had already performed the focal practice.

As noted in Chapter 2, section 2.2.4, PT offers a description of the elements of practices and their integration. In the case of REBUS, the proto- practice is infant mobility as defined above and the elements of the proto-practice are:

- *materials* are strollers, infant car seats, packaging materials for both products and laptops to book the offering and the product collection for return
- *competences* are knowledge on how to change and dress infants, how to transport them safely using the materials above, ICT skills to book delivery and end-service collection by the provider and product and packaging stewardship
- *meanings* associated with the practice are safety, care for the infant, fashion value and environmental protection meanings.

Participants were encouraged to perform the proto-practice of using materials provided through the PSS offering by means of communications by the NCT but also by social contagion (Shove et al. 2012). This occurred through contact with peers who were already practitioners, i.e. performing the proto-practice and recommending the PSS offering to others. The NCT had an important role in lending credibility to the scheme through their reputation as an expert honest broker, as Section 4.3.4 of this chapter previously explained.

Following Mylan (2015) the analysis identified five outcomes of the focal practice by interpreting the data across the eight dimensions as section 3.5.2.1 explained. The sections below explicate how the elements interact in the focal practice in the framework:

1) Dynamics of practices
2) Materials and processes of appropriation
3) Meanings and processes of appreciation
4) Competences
5) Links between the focal practice and other practices

The following sections explicate the findings following the framework.

4.4.1 Dynamics of practices

Infant mobility practices have several dynamics, which have a potential to shape the proto-practice and these are:

- increased emphasis towards health and safety
- Rapid product innovation due to fashion (Mintel 2018)
- Diversification and multiplication of practices followed by development of new products
- An increase in purchase of infant products by the parents as opposed to donations from grandparents and siblings (Thomsen and Sørensen 2006)
- a rising use of ICT in commercial transactions, for example ordering goods on line
- Demographic trends towards a reduced birth rate in most Western countries

As was noted in section 4.2 of this chapter, increasingly regulation emphasizes safety (Sengölge and Vincenten 2013), which shapes consumption of both car

seats and strollers. Expert advice reaches future and new parents from various expert sources such as health organizations and charities. This concerns the selection of suitable materials but also advises against using second hand products because of risk for damage from previous use (Mumsnet.com , nhs.uk , nct.org.uk/ 2018, nhs.uk 2018). Manufacturers through their trade associations also endorse this (Baby Product Association 2014). The market for second hand products is sizeable (Mintel 2012), however sales of new products are growing (Mintel 2018). News stories about health issues with pre-used materials, including accidents (Smithers and Haurant 2009, Mumsnet.com 2015) may be accelerating a dynamic away from using and sharing pre-used products.

Frequent new product introductions by manufacturers have been driven by fashion trends (Ibid.). This engenders product proliferation, which may obstruct reuse of products. Existing parents may want to purchase new products in addition to those they already possess, including from previous parenting, because of wanting to keep up with fashion. For similar reasons they may not want to use pre-used products donated by siblings. For example, Ashya narrated:

> *"I saved everything in the loft but (….) as times move on you want the latest stuff, you want nice things for the baby, and new things are very expensive, so I've been looking around, seeing what the best prices are…"*

Therefore, she was considering purchasing new products but she was worried about costs. Practices involving pushchairs diversified and multiplied (cf. Mylan 2015) in the 1980s and 1990s to include trekking and jogging (De La Garza 2009), where parents push infants on strollers whilst performing these activities. This dynamic led to new strollers designed specifically for this purpose being offered on consumer markets and thus a multiplication of practices was observed, providing manufacturers with opportunities to manufacture new pushchairs and thus for differentiation. Fashion trends, diversification and multiplication of practices therefore result in proliferation of types of strollers. There is a trend in reduction of use of pre-used products even if donated by grandparents and siblings (Thomsen and Sørensen 2006). Mintel (2018) claims that a sizeable share of the market for newly purchased products consists of gifts.

Increasingly, purchases of products such as infant car seats and strollers are made on line (Ibid.) instead of through traditional retail outlets. Materials however travel through retail outlets rather than directly from manufacturers as they are ordered from websites such as Mothercare (mothercare.com) and Mamas and Papas (mamasandpapas.com). These outlets are important for new product launches as they can demonstrate products and let consumers try them.

The UK birth rate dropped in the period 1990-2016 (statista.com). The average number of children per woman had fallen to 1.85 by 2014 (bbc.co.uk, 2014) with many families having only one child, which may restrict opportunities for multiple use of infant mobility products. The trend towards women to give birth later in life and the drop in the fertility rate means that the requirement to use materials such as infant car seats and strollers also drops as families may perform this practice only once in their life. This means that products can be used for one child only and the cost of purchasing them cannot be recovered across two children. This dynamic may support using rented, pre-used materials. Catherine and Ross for example supported this notion and they said:

"…. we don't know (…) whether we'll have another baby in the future so (…) it would be spending a lot of money…"

These participants therefore saw the cost of the products as difficult to justify because they might be used only for one child. Therefore, they used a stroller and a car seat provided through the PSS offering to perform the proto-practice.

In summary, whilst most of the dynamics of the focal practice may obstruct recruitment in the proto-practice, e.g. demand for a wide range of new products and health and safety initiatives that discourage the use of pre-used products, demographic changes make use of materials through PSS attractive. Parents may see benefits from savings by adopting a "pay for use" (Manzini and Vezzoli 2003) access model that enables them to use high specification products.

4.4.2 Materials and processes of appropriation

The materials used by participants in the proto-practice were infant car seats and strollers and their packaging (a box and wrapping). The proto-practice also required access to a computer or mobile phone to place a booking for delivery of the materials and pick up by the supplier at the end of the service period.

The products used in the PSS offering were those normally available on the market from Dorel and not specially designed for the PSS offering. The innovation therefore consisted not of the products themselves but of the use of pre-used materials provided through the PSS and the booking and return practices. The range of products was limited because of cost issues in the project. As Chapter 2, section 2.2.4 explained, *appropriation* involves wear and tear of products as human subjects consume and finally dispose of them (Warde 2005). The interview results indicate that participants were concerned about the wear and tear of the products provided in the performance of the proto-practice. Participants reported that they were uneasy about incurring a liability to the provider for damages from appropriating products that they did not own. Beverley's statement exemplifies this,

"Just because it's not mine so I'd be a bit sort of concerned about not getting my deposit back".

For similar reasons, some participants said that they felt that using products provided through the PSS did not leave them freedom to adapt them to their needs. Participants considered modifying products in some ways and this encouraged use of their own products in the focal practice. In effect, some said that they would have considered customizing products if these had been their own. Most participants explained that they would make various types of changes to products they owned, from changing the colour of the fabrics to attaching stickers to the products, which they did not feel they could with the PSS offering. Some participants in fact were using a product provided through the PSS, e.g. a car seat but were using their own stroller. Beverley described adaptations she wanted to make to her pram,

"If we decided it was a good idea to use a different material for the handlebar grip, to add a handlebar-mounted brake or to stick a big colourful picture on the underside of the canopy - for (child) entertainment purposes, it's nice to think that we could without trouble".

Such personalization issues also featured in the CCT analysis but PT's view of personalization differs from CCT's one. The adaptation or personalization of a product used to perform a practice is a social practice in itself (Karvonen 2013, Grubbauer 2015), which is called DIY remodelling practices, as Chapter 2

explained and it can be considered part of the main consumption practice (in this case the focal practice) as practices can be part of other practices (Watson 2012). Here participants consider performing remodelling practices of infant products for their specific infant transport practices but they do not think they have a right to make these changes if they do not own the materials and these matters. In their narration it came across as a given that they do not consider legitimate to make changes to a product which the user does not own. In fact, ownership confers the necessary right to modify products (Snare 1972) and this seems to be an established convention, which shapes the focal practice and may inhibit the uptake of the proto-practice. Here the interview data seem to show that ownership, a convention which grants control over owned materials and freedom to use and modify them to suit the participants' requirements (Snare 1972), conflicts with the contractual relationship they have with the provider of the PSS.

The same contractual relationship involves stewardship of materials, including their packaging, ready for collection by the provider at the end of the service interval. The need to store the packaging, which needs to be returned together with the products as directed by the provider, seems to reduce the appeal of the PSS as a space saving option. Thus, Amy explained,

"I don't have the box any more. I can't remember exactly what I need to do to return it so that's kind of in the back of my mind. I hope it's not a huge inconvenience to have it returned, I hope it's not a lot of work (laughs)".

Here Amy seems concerned about her responsibilities and possible contractual liabilities around the return of the product to the provider and about the commitment to undertake more work as part of the proto-practice. This indicates that using products provided through a use orientated PSS for infant mobility practices is associated with concerns with various aspects of appropriation as illustrated above. This seems to make the proto-practice less attractive than use of own products.

In summary, various aspects of appropriation may inhibit the uptake of the proto-practice because consumers may be concerned about possible penalties if they do not return the materials in acceptable condition to be promptly refurbished by the provider for next users and not having to be written off. In

fact, as part of the project, several products had to be written off. It will be seen in section 4.4.5 of this chapter that for the same reason, the greatest concern of participants with appropriation arises from linking the focal practice with other practices.

4.4.3 Meanings and processes of appreciation

Section 4.4.1 of this chapter explicated some of the dynamics of the focal practice and showed how these dynamics affected development of innovative products. As Chapter 2, section 2.2.4 explained, meanings are important because they motivate people to uptake and perform practices (Reckwitz 2002) and have a strong role in the shaping of practices (Mylan 2015). Because of the practice dynamics, human beings appreciate the focal practice with meanings which shape the ability of the proto-practice to recruit participants. The growing emphasis on health and safety accelerated by legislation is amplified by communications from NHS (the UK health authority) websites. Groups perceived as expert such as the NCT and Mumsnet circulate information about use of products which associate negative meanings of risk to health and safety with the use of pre-used products. The meanings of health and safety risk is linked particularly strongly with the focal practice using pre-used car seats, as convention warns against possible car crashes they might have been involved in. Previous users could have damaged the materials and the link is amplified by "scare stories" and "fake news". All this engenders social conventions which deter parents from performing the proto-practice. Thus embedded conventions supported by expert advice make the traditional focal practice obdurate, certainly amongst first time parents (cf. Thomsen and Sørensen 2006). Health and safety appear to be at the top of participants' minds and this creates concerns about the safety of the PSS. Their peers see the use of second hand products, particularly by experienced parents, in unfavourable light (Williams and Widebank 2006).

To address these conventions inhibiting renting materials, the provider introduced a quality assurance (QA) process. A certificate, which detailed which refurbishment had been performed on the product, supported the quality assurance, defined in Chapter 2. The provider and the NCT communicated this by using a label and this especially seemed to reassure parents of the safety of the PSS. Charlotte for example said she was aware of

"…safety regulations, I'm sure that they've cared for them and they haven't damaged (….) the car seats, (…), I think they have to have quite high safety specifications...".

NCT's endorsement eased recruitment on the proto-practice. These two aspects contributed to make it socially acceptable. They disassociated the proto-practice from negative meanings such as health and safety risks and associated it with positive meanings such as cost effectiveness. Amanda for example explained that she

"…specifically looked on the NCT site because I'd done the NCT course and I knew that they had rental products (…) so that's where I started looking".

This is because, as a not-for-profit organization, the NCT was perceived as an "honest broker". Participants therefore balanced meanings of Health and Safety risk against those of *affordability* when opting for pre-used prams. Ashya for example explained that

"…Because you know, every review that I've read or advice that I've heard is, you know, you never use second-hand car seats, just in case it's been in an accident or it's not safe but obviously this has been tested to make sure that it is safe and it is, you know, you can do that, you can save money which, (…), is one of the things that you are thinking about when you're having a baby".

This comment shows that social convention is against the PSS offering but the Quality Assurance process, which as argued above, seemed to be loosening the bonds of using owned materials with meanings of health and safety and established links between the proto-practice and meanings of affordability and cost effectiveness and so legitimized use of pre-used products. This meaning is relevant especially to PSS offerings which involve group "0" car seats, suitable for infants from zero to 9 months, because these products are only of short-term use. This is further facilitated by the tendency of families to have only one child. Catherine and Ross explained that

"…. when we looked at the cost of renting, actually to rent for a year, you can rent something of a better quality than we'd be able to buy for a year but for less money really…."

Therefore, the appreciation of the proto-practice with cost effectiveness, helped recruit parents to the proto-practice with the promise of financial savings. Section 4.3.2 explicated that users of the PSS offering had a contractual obligation to return the products accessed in their original state. As seen in the previous section, users therefore appreciated the proto-practice with a meaning of risk of contractual liability for damages, which may have inhibited it. This is developed further in the competences section 4.4.4.

Walking an infant around with a pram has social value, hence brands and features are important. One of the trends seen in section 4.4.1 was the development of new products induced by multiplication and diversification of practices (cf. Mylan 2015). Parents seemed to care be seen with high specification prams. Here the focal practice was appreciated with meanings of status, linked with fashion and the use of owned fashionable materials. For many participants therefore the proto-practice could not compete with the traditional focal practice because the meaning of status was strongly linked to product ownership. In addition, the remodelling practices explained in 4.4.2 also attributed new meanings to the practice (Grubbauer 2015). Participants' hesitation to personalize products therefore also inhibited PSS because it may not have taken up meanings which were important to consumers.

Section 4.4.1 showed that a small number of participants were recruited into the proto- practice because they liked to be able to use high specification materials at a reduced cost. For these participants therefore, the bond between the meaning of status and the use of owned fashionable materials might have been loosened. This might have promoted PSS uptake. A "feel good" factor arose from the combination with the meanings of status and cost effectiveness could therefore have enticed consumers to take up the practice. In summary, the bond of the focal practice with a meaning of status by using *owned* fashionable materials was not strong and despite most participants preferring to use their own products, some did perform the proto-practice because of those meanings. When they did use products accessed through PSS, however, they seemed inclined to conceal that they did. This was evidence that social conventions still associate status with ownership.

Finally, participants seemed to appreciate the traditional focal practice with meanings such as *parental pride* and *competence, environment protection* and *freedom* from having to dispose of the product. These meanings were also

compatible with the proto-practice. The next section explores the competences that support the proto-practice.

4.4.4 Competences

Competences are the knowledge and skills required to use materials and extract value from them (Shove et al. 2012). In the infant care consumptionscape, new parents are often overwhelmed by the need to learn about their new role quickly (Thomsen and Sørensen 2006, Banister et al. 2009) and this includes "know-how" (cf. Shove et al. 2012) on infant mobility. Their own parents and network transmit most competences on child rearing to them as social conventions. As Angela explained, she

> "…*talked to other friends who already have babies, about what, where their children slept, what kind of beds they had*".

Competences are codified as instructions transmitted by health authorities, e.g. the NHS in the UK, doctor surgeries and hospitals and in parental classes (nct.org.uk/ 2018). They are also circulated in handbooks and other media (Shove et al. 2012) such as web sites. Manufacturers spread knowledge on product use by pamphlets and in retail outlets – do and don'ts with using car seats and strollers. In REBUS' case, Angela stated that she absorbed knowledge and skills through:

> "(…) *on online forums for mums, (…) there (were) bits that you could download information, there was some information on there, there was a link which took you to how it worked, and then there was another bit that you could download".*

Therefore, competences increasingly travel through internet. In this case, the NHS, expert organizations such as the NCT and Mumsnet and manufacturers' web sites played an important role.

In the case of the proto-practice, competences which were specific to it travelled through a closer interaction of the provider with parents. The initial interaction was through the NCT web site, however from when the booking had taken place the supplier interacted directly with participants via telephone and e-mail, giving instructions on materials' maintenance and stewardship, including packaging

which was retained for recollection. Therefore, the proto-practice involved additional competences to those in the traditional focal practice. As seen in section 4.4.2 the proto-practice required ICT skills as the parents had to book the service and delivery of the materials through a laptop or mobile phone and book the pick up by the supplier at the end of the service period. If looking at the PSS in a wider context including the provider practices, these practices included the introduction of new processes, i.e. refurbishment and servicing of materials between uses. Participants expected the provider to prompt them for recollection of materials and possibly issue replacement materials for the infant as he or she got older. As Cara explained,

"…when the lease term is up we don't have to drive it to somewhere on the other side of London or something, you know, it's just a simple, they ring me up, I repackage it and they come and collect it".

Therefore, the activities performed to secure the use of the materials are important aspects of the proto-practice. Bardhi and Eckhardt (2012) and Le Vine et al. (2014a) defined these activities as access as seen in Chapter 2. Access can be considered a practice in itself, which uses materials (laptop and mobile phones), competences (using the ICT equipment) and meanings (the positive meanings seen in section 4.4.2). Access, which included the return activities, was part of the overall proto-practice as practices can integrate as part of each other (Watson 2012). Access replaced other sets of practices associated with the focal practice, for example those connected with the product disposal by consumers at the end of life cycle. This involves for example selling pre-used strollers to others through web sites (Mintel 2012, 2018).

The additional work required to access materials however was not always welcome by participants, who disliked aspects of product return placing demands on their time. Therefore, the proto-practice was associated with additional time and effort connected with the return of products to the PSS supplier and forced them to acquire the competences necessary to maintain the product and get it ready for recollection as specified by the PSS supplier. This seemed to be an unwelcome aspect of the proto-practice and therefore consumers may have seen it as a downside of PSS.

4.4.5 Links between the proto-practice and other practices

In line with Mylan's (2015) conceptual model, the Focal Practice is linked with everyday practices, such as shopping and tightly coupled with other mobility practices such as driving and using public transport. Car seats are secured to a car's back seat and strollers are routinely folded and loaded onto cars or public transport vehicles when parents travel to places with their infants. These links shape materials required for the practice to be lightweight and easily foldable. In addition, pushchairs have built-in storage space where shopping and other items can be stored during travel and could help, for example, carry small items of luggage when traveling to and through airports.

The focal practice has also established links with other practices such as jogging and hiking and this differentiated and multiplied it by generating multiple variations of the practice, such as transporting an infant whilst jogging, trekking or going shopping. For example, parents jog or hike whilst pushing their infants on strollers. This, as seen in section 4.4.1 created demand for suitable materials, for example strollers with suspensions and large wheels. Amanda for example had:

"…*got something that's called a Mountain Buggy (a brand) and the (model) is a Swift and it's one that's also good for exercising so it's a three-wheeler...and that was high on our priority list as well because we didn't want to end up with two buggies, one that we could run with and one that we sort of walked around with...pretty early on we made the decision that we wanted one that was specific to (this) activity*".

Amanda used this specific owned product because the PSS provision offered a limited range and the proto-practice did not offer the flexibility Amanda desired. Similarly, Beverley explained that for her pram she wanted something to go hiking,

"…*for the pushchair, we wanted something practical because we do a lot of walking, off-road, you know like in parks and stuff, we've got two dogs, so we wanted something, like these wheels are for like off-road and also wanted something that wasn't too heavy, you know, to put in the car and this folds up quite easily*".

Therefore, these interview results show that a PSS offering may need to offer a wider range of products to suit users than was available in the PSS offering. However, parents did not want to use strollers provided through PSS in extreme conditions in order to avoid damaging them. Beverley for example would

"…*feel a bit restricted by that because I wouldn't want to take it to the beach, for example, whereas if I have my own, you know, I'd just make sure, wash it out afterwards and that sort of thing... whereas with a rental one, I'd kind of probably be a bit more circumspect about taking it various places.*

Therefore, the link of the focal practice with other practices, such as hiking and jogging made the PSS offering unattractive because users were wary of incurring penalties from damaging the materials provided. Parents' practices here were shaped by the social convention that damaging materials that they did not own was not legitimate (cf. Snare 1972). They therefore resisted performing the proto-practice. Therefore, for these participants their infant mobility practice was not able to align with PSS (cf. Mylan 2015) and differentiate into the proto-practice, because the link of the focal practice with practices of jogging and trekking made them feel unable to perform the product stewardship that PSS required to return the products for refurbishing and use by other parents. The infant mobility practice would have had to severe its links with these other practices to allow this alignment. The links between the focal practice and other practices however were strong and inhibited the alignment of the focal practice with PSS in these cases. This made the traditional focal practice obdurate and hard to replace (cf. Shove et al. 2012) by the proto-practice because the latter did not grant freedom to use or adapt materials for harsh conditions. This would obstruct PSS uptake.

4.4.6 Summary

Section 4.3 explored the usefulness of consumer choice research perspectives to understand the likelihood or failure to uptake PSS. The PT based analysis reported in section 4.4 showed a different view, which is articulated across the dynamics of the practice, the tight or loose nature of bonds between elements and the links between the infant mobility practice and other practices human subjects perform. The results of the PT based analysis offered insights which

are summarized in table 4-4, compared with the claims of substantive and supporting literature.

Literature claim	Results
Practices diversify and multiply as an effect of their link with other practices (Mylan 2015). Diversification and multiplication of practices create demand for diverse types or version of products (Mylan 2015)	Within the traditional focal practice there were dynamics shaped by health and safety meanings, rapid evolution of products to match fashion trends and diversification and multiplication of practices due to their links with other practices. Diversification and multiplication of the practice create demand for diverse types of products and brands, due to fashion and to links with other practices such as jogging and trekking. These dynamics affected the proto-practice. Demographic dynamics on the other hand favoured the PSS offering, as increasingly families have only one child, which reduces opportunities for multiple uses
In order to uptake a new practice human subjects need to acquire new competences connected with the use of new materials (Pantzar and Shove 2010, Shove et al. 2012).	The proto-practice required a new set of competences associated with access to and return of products. These competences were to do with care of products and packaging to return them to the provider. These competences created some anxiety in participants (especially returning the product)
Practices based on innovative products need to be disassociated from negative meanings and associated with positive meanings (Shove et al. 2012). These associations and dis-associations with meanings may be facilitated by expert groups or bodies (Pantzar and Shove 2010, Shove et al. 2012)	Due to regulation and dissemination of information (competences) by expert bodies, increasingly meanings of health and safety were associated with the traditional practice. Health and safety risks are associated with using pre-used materials, which can affect uptake of the PSS offering. Links of environmental protection meanings with the PSS offering (reuse of products) were favourable to the PSS. However, these had to compete with health and safety risks meanings, which were strongly associated with use of pre-used products and by implication the PSS offering. A credible organization such as the NCT, a not-for-profit, community organization, in conjunction with a quality assurance process assisted breaking links of the PSS offering with these meanings of health and safety risks and establishing new links with environmental, affordability and cost effectiveness meanings
Links between practices and other practices human subjects perform create obduracy in incumbent practices and therefore obstruct the uptake of new practices (Mylan 2015) and therefore of materials associated with these new practices (Shove et al. 2012)	In the case of strollers, the PSS offering struggled. This was because the nature of the complexes of practices – jogging and trekking – raised perceived risks of contractual liability for damage and demands for adaptations that led consumers to prefer using their own new products. The participants did not feel able to exercise good product stewardship nor free to customize the products provided through the PSS.

Table 4-4 Result of PT analysis compared with literature

Whilst several participants took up the proto-practice performed with refurbished car seats, the PSS offering featuring strollers had a much poorer uptake because of social-structural reasons. The traditional practice using strollers is a far more public practice than transporting infants in a car and is linked to several socialized practices such as shopping and visiting cafes with

friends. The link with the other practices above mentioned created obduracy, which meant that the infant mobility practice could not align (Mylan 2015) with a PSS offering of strollers. In summary whilst CCT offers an explanation by means of consumer choice and justification, PT helps identify a number of social and structural aspects that obstructed the proto-practice and meant that the traditional practice had little freedom to evolve (Crosbie and Guy 2008) to encompass PSS (cf. Mylan 2015).

4.5 Discussion and conclusion

The review of literature in Chapter 2 reported Tukker's (2015) claim that PSS is not viable in consumer markets because it does not give consumers the control over products they demand. This chapter described a use orientated PSS where consumers accessed a product and importantly, retained possession of it for the time needed, e.g. 6 months. This granted some level of control. Participants could also sequentially access different products to suit their needs. For example, they could start from accessing a group 0 car seat that goes from 0-9 months then swap it for a car seat for older infants. When accessing a stroller, they could access products which were needed for a short time such as carrycots and swap strollers suitable for different stages of infant growth. The PSS could therefore be configured as a seamless subscription where products were accessed to fit the growth stages of the infant. This contrasts with the case that the next chapter describes where access is for shorter intervals, on a "pay as you drive" basis and people do not retain possession of the products.

One of the aspects of the REBUS case study was the difference in uptake between car seats and pushchairs, where car seats had a far higher uptake by a ratio of nearly 10:1. This seems to show that the nature of products accessed matters (cf. Armstrong et al. 2015, Catulli and Reed 2017). The characteristics of the offering which users were concerned about were assurance that pre-used products had a standard quality comparable with new products (cf. Gottberg and Cook 2008, Sundin et al. 2009), for which quality assurance certification was essential. In the case of car seats, this assurance engendered trust in the PSS offering. In the case of the strollers, on the other hand, concerns were the fashion value of strollers and fit with the users' life styles. This meant that product proliferation and innovation challenged the REBUS PSS offering

described in the chapter, configured as it was with a limited number of models of strollers. Manzini and Vezzoli (2003) and later Bardhi and Eckhardt (2012) claimed that careless and opportunistic behaviour in using products could be a problem for PSS providers. The findings in this chapter question that view, in fact one of the concerns participants had, was potential financial liabilities that could arise from damages to the product either from use in rough conditions or modifications. This is logical because the supplier kept a record of which participants had which products and the products were tagged accordingly.

As explained earlier the case study was analysed based on CCT and PT, starting from the individual choice lens because this had been the dominant approach in studies of sustainable consumption (cf. Shove 2010). Analysis of the case study through CCT offers insight in the role of consumer individual choice and deliberate behaviour in PSS consumption. Strollers in particular have an important symbolic function and parents therefore require symbolic value from these. This product has an emotional value for consumers as it is linked to liminal phases (Thomsen and Sørensen 2006). The brand of strollers is very important in this respect, as brands are imbued with symbolic elements. The products are shaped by mutable fashion trends and diverse brand preferences. Parents therefore may reject the PSS if the product provided as part of the service is not of the brand they desire. So important is the need for symbolic value in parenting, that parents may accept leasing strollers for rational reasons or because they are associated with meanings of cost effectiveness or affordability but they would not want to make this known by their peers because of concern about being seen as disadvantaged consumers (Williams and Widebank 2006). PSS designers at the very least may have to include a wide range of products and brands to support the PSS, which may raise issues of financial feasibility for providers. The claim by some PSS literature that products which have high symbolic value are not suitable for PSS (cf. Schrader 1999, Scholl 2008) have been tested here and confirmed by observing different performance of car seats and strollers but it will be interesting to compare it further with electric vehicles in Chapter 5.

Consumption of infant care products is important for social value as well as identity construction. The participants appreciated being part of a community revolving around a co-brand of PSS involving a not-for-profit and a commercial brand such as in this case the NCT membership, indicating that they are

interested in community meanings. A co-brand associated with these meanings could support PSS consumption. Participants shared a number of meanings which were important to them and this demonstrates that the combination of the two brands has a great potential for symbolic dimensions that neither of the two brands could offer on their own (cf. Askegaard and Bengtsson 2005). Co-branding is therefore a productive strategy for PSS. For a PSS offering to be established it requires to be aligned within an accepted co-brand community, which could be problematic. The accepted brand community should have appropriate resources. In the REBUS case study, the websites of NCT and Mumsnet were necessary for PSS meanings to travel and diffuse. Askegaard and Bengtsson (2005) comment that a co-brand needs to be designed with the two brands seen as interdependent. This aspect of PSS consumption needs further exploration in another consumptionscape, which will be described in the next chapter.

As section 4.4.1 explained, because of demographic changes, families are likely to have only one child. This appears to induce participants to consider PSS offerings in order to achieve financial benefits. In addition, consumers may have altruistic orientations that make them receptive to environmental meanings and less concerned about owning products (cf. Craig-Lees and Hill 2002) so they could be a target for PSS. Some other consumers distrust marketers and resent their hegemony (Kozinets and Handelman 2004). Distrust can be considered the opposite of trust (Lewicki et al. 1998), it is the "expectation that others will not act in one's best interests, even engaging in potentially injurious behaviour and the expectation that capable and responsible behaviour from specific individuals will not be forthcoming" (Ibid. 439). These consumers' characteristics may make a PSS provided by a non-commercial provider attractive. Even in these cases, however, most participants accessed car seats but purchased strollers, so PSS consumption was a secondary option.

Therefore, from a consumer choice point of view, participants would justify consuming PSS or not, with rational reasons connected with economy, health and safety risks. Another justification was to display parental commitment with the use of high quality, fashionable products that fit with their life style. Finally, there it was a rational consideration of financial risks connected with damages to products. Considering the better uptake of the car seat offering compared

with the stroller, it is useful to compare this interpretation with one from the PT standpoint.

Analysis of the case study through PT offers insights on the role of social-structural aspects such as social conventions and infrastructure on PSS uptake. Particularly for car seats, a social convention of avoiding pre-used products was uncovered supported by expert sources as well as peers. Use of new car seats is therefore an aspect of the collective practice of infant mobility. Advice against using pre-used products applies to all infant products but the accepted convention is that risk from strollers is lower, so these products are more frequently sold on the second-hand market (Mintel 2012, 2018). It is interesting therefore that in this case, participants consumed PSS with car seats and far less with strollers. This might be because car seats are standardized products that require little adaptation to participants' life styles. It is essential, however, that the use of refurbished car seats accessed through the PSS in these practices is disassociated from meanings of risk to health and safety. It appears that in this case certified quality assurance of the refurbishment process in addition with the NCT and Dorel brands combined to achieve this purpose. At the same time, the practice needed to be associated with meanings of cost effectiveness and environmental protection that could support the PSS. The interview results indicated this was the case.

In the case of strollers, the PSS was less successful despite use of pre-used strollers being generally more accepted. As described in the chapter, the traditional focal practice seemed to have been made more obdurate by its diversification and multiplication (Mylan 2015) in other practices following links with activities such as jogging and trekking. This developed demand for products suitable for a variety of life styles and for freedom to modify products and from risks associated with contractual liabilities for damage to strollers. Parents were concerned about not being able to exercise good stewardship of the products and because of this, they did not perform the proto-practice. Thus, to encourage PSS consumption, it would be necessary to disassociate the practice from these meanings of risk of liability for damage and associate it with positive meanings, e.g. ability to swap products seamlessly to perform differentiated and linked practices. Insurance integrated in the PSS could also offset these concerns. A question that would arise then of course would be whether this would be financially viable for providers. Sections 4.4.2 – 4.4.4 showed that

these structural factors affected the proto-practice using strollers but not the one with car seats. This indicates that social-structural aspects offer a good explanation of failure to consume PSS with products such as strollers.

Results also showed that PSS consumption required a diversification and multiplication of the focal practice into the proto-practice, as activities were added to the traditional focal practice. Whilst ordering products online and having them delivered is of little novelty for consumers, the need to retain the packaging and prepare the products for return to the provider is a new sub-practice, with its own integrated competences of booking and product stewardship and materials (lap-top, mobile phone, packaging). This differentiates the proto-practice from conventional consumption, where consumers often sell on or even dispose of car seats or strollers at the end of the use cycle. In this case, whilst social conventions around using pre-used products and links of infant mobility with other practices shaped PSS consumption, the competences associated with access to and return of the materials were of concern to some participants but not a prohibitive challenge. No significant difference was observed between participants in their ability to perform the practices of accessing the infant equipment for use and return them to the supplier.

The analytical insights from CCT and PT cannot be combined because of incommensurability, as Chapter 2 explained. A dialogical approach however can be used to make sense of the data. For car seats, it appears the participants creatively considered taking up the PSS offering by elaborating on positive meanings associated with it. The proto-practice however was in conflict with accepted practices and conventions. The provider addressed this issue with a creative initiative: a certified quality assurance process which reassured users. The quality assurance process helped attribute meanings of safety to the PSS in line with conventions and encouraged participants to perform the proto-practice for car seats and not for strollers. Indeed, CCT and PT based analysis unveils that the type of product is an important aspect that shapes PSS consumption. Products that are attributed symbolic value engender emotional attachment and are more of a challenge for a use orientated PSS (cf. Schrader 1999, Scholl 2008, Armstrong et al. 2015, Catulli and Reed 2017).

The next chapter explores challenges represented by a different PSS offering in another consumptionscape. This is a case of use orientated PSS which features

electrical vehicles which are of a less emotional, intimate nature and are accessed for short periods of time through a "pay for access as you drive" system.

5 E-carclub case study

5.1 Introduction

Chapter 4 presented the REBUS case study, where participants accessed infant strollers and car seats through a PSS offering. This chapter reports the findings of the e-carclub case study. Chapter 3 presented the e-carclub's service as providing users access to electric vehicles (EVs) through membership of a car club. Like the REBUS case study, e-carclub can be considered a use orientated PSS. The two PSS offerings analysed in this thesis are differentiated by among other things, duration of access. In the case of REBUS, users retained possession of the product for a minimum period of six months upon payment of a lease fee. This means that in that period the participants were free to use the product whenever they wished. In the case of e-carclub, participants did not lease a car for 6 months to use as and when they wanted. Instead, they accessed the electric vehicles (EV) for individual trips, with the vehicle needing to be booked and released with each use.

The chapter first outlines how the e-carclub PSS operated, followed by the analysis of the interviews with e-carclub current and lapsed users and of individuals aware of e-carclub. As in Chapter 4, the analysis is first through the lens of Consumer Culture Theory (CCT) and then Practice Theory (PT). The chapter then discusses the insights provided by each perspective and a consideration of similarities and contrasts between the two case studies.

5.2 The E-carclub

The founding partners of e-carclub were the *National Energy Foundation* and *Sustainable Venture* (e-carclub.co.uk 2015). The Europcar group subsequently acquired a majority share in e-carclub in 2015 (Ibid.). As seen in Chapter 2 and 3, Le Vine et al. (2014b) classify car clubs into:

(a) round trip

(b) point to point car clubs.

A round trip car club requires a car to be returned to the place where it was picked up. Point-to-point car clubs are where there are a number of car club 'stations' and cars can be picked up at one station and left at another. There are electric car clubs which are point to point, such as the Paris Autolib (Autolib.eu),

which had car club stations across central Paris. E-carclub however is designed as a round trip car club, where users need to return the vehicle to where they first picked it up.

One of the key strategies in e-carclub's business model is to collaborate with community organisations and Universities when opening a branch (Valdez 2015). This builds on existing relationships these communities have with their members and it also provides practical assistance, such as securing parking spaces where charging stations are installed. Each of the sites of e-carclub is branded as its own branch. For example, at the time the interviews were conducted, there was a Future Wolverton e-carclub, a University of Hertfordshire (UH) e-carclub and a Watford City Hall e-carclub. Each of these branches of e-carclub aimed to target users that aggregated around these communities, such as citizens in the case of Future Wolverton and Watford City Hall and employees and students in the case of the University of Hertfordshire. This is a co-branding strategy (cf. Grossman 1997, Leuthesser et al. 2003), where the company's e-carclub brand is intentionally combined with a local provision brand to achieve specific benefits (Leuthesser et al. 2003). Initially the research aimed to focus on the e-carclub run by *Future Wolverton*, a community-led organisation concerned with sustainability objectives based in Wolverton (Futurewolverton.org 2015). Wolverton is a town with a population of about 19,000 people located within Milton Keynes (Visionofbritain.org). Future Wolverton was the first branch of e-carclub (Futurewolverton.org 2015, Valdez 2015), set up in May 2012 (Futurewolverton.org 2015). Fig 5-1 shows an e-carclub station in the town. The Future Wolverton e-carclub was however ceasing its activity when the research started and very few users could be found to participate in the case study. The research therefore was extended to the University of Hertfordshire and Watford City Hall.
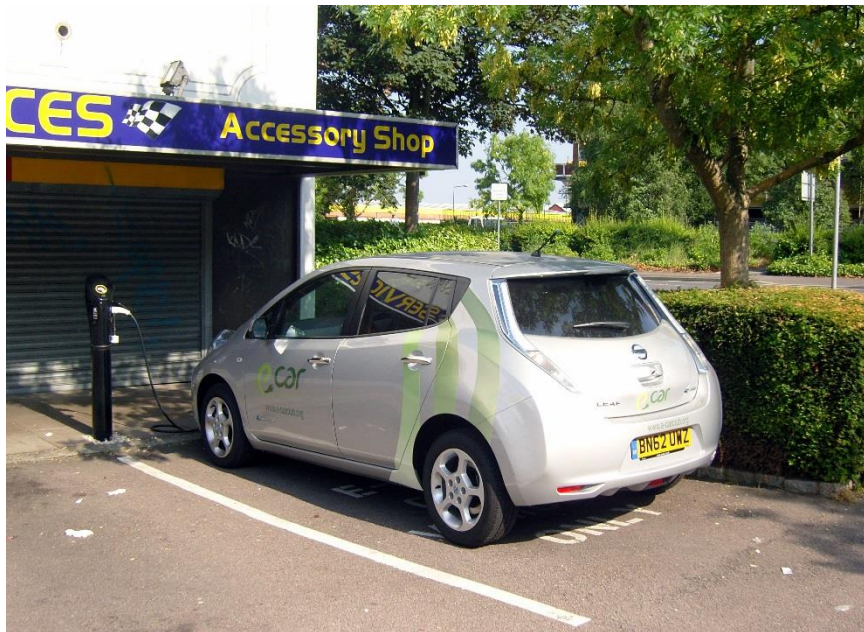
Figure 5-1 Wolverton eCar Club Leaf on charge at a parking station in a shopping car park

The University of Hertfordshire (UH) is a university based in Hatfield, some 30 km. north of London. Founded in 1952, UH achieved university status in 1992 and has a student community of over 24,600 and 2,700 staff (Herts.ac.uk 2017b). The University has a strong record of transport initiatives for its staff and student.   As UH has managed a bus company, UNO Bus since 1992 (Herts.ac.uk 2018), so it has developed an expertise in managing travel resources, with considerable investment in new technologies (Shankleman 2013). The university established a partnership with e-carclub in 2012, being "the first higher education institute with a car club" and advertised the club to students on their website (Herts.ac.uk 2017a). Watford City Hall is the local authority of Watford, a town in Hertfordshire with circa 90,000 inhabitants, which also established a partnership with e-carclub (Watford-City-Hall 2016). As with all city car clubs, people needed to be members of the club to use the vehicles and the e-car club charged £50 per annum for membership. Applicants were required to have a valid driving license without endorsements to enrol. There were two types of memberships, *community members*, designed for regular users and *casual members*, designed for occasional users. The pioneering Wolverton e-carclub offered a limited choice of vehicles: a small hatchback (Renault Zoe), a large hatchback (Nissan Leaf) and a light commercial vehicle (Renault Kangoo Max) (e-carclub.co.uk 2015). The University of Hertfordshire e-carclub had six Renault Zoe cars and Watford City Hall also six cars, of which two were parked in public spaces and four in the

Council premises. These vehicles were located on dedicated spaces where their batteries could be recharged as needed (Ibid.). Cars were available, for example, at three locations in Watford and Wolverton and on the University of Hertfordshire Campus. Cars were booked through the e-carclub web site via a computer or mobile phone – and were accessible by the hour for 24 hours (Ibid).

In the case study, participants were private drivers. Apart from the annual individual subscription, cars were rented out at hourly fees between £4.50 (small hatchback for community member) and £7.50 (a midsize van for casual users). Membership included free car charging (Ibid.) – in practice, this is the equivalent of renting a car without having to pay for fuel. Membership included insurance, breakdown cover and an instructional video (Ibid.). The web site explained the benefits of this PSS, e.g. no need to pay for insurance, repairs, maintenance, road tax and MOT (Ibid.). Future Wolverton piloted the e-carclub scheme in May 2012 and it had two vehicles accessible to members at October 2015, the time of the interviews (Futurewolverton.org 2015).

Figure 5-2 a Renault Zoe parked at a charging point on Campus, University of Hertfordshire

The following sections explore accessing electric vehicles using a PSS carclub

From a consumer choice and a practice theory perspectives. Throughout the chapter, the term "PSS offering" is used to identify the service provided by the EV PSS. As was the case in Chapter 4, the terms "rental" and "rent" are at times used because

1) rental and rent are terms used by participants in interviews and 2) the term "rental charge" is used to indicate the fees paid by the users to use the EVs.

5.3 Consumer choice and PSS: Consumer Culture Theory

As in Chapter 4, the research investigates a perspective of how PSS consumption is shaped based on a view of consumers' agency. Data analysis using the CCT framework focuses on individual consumers and groups of consumers, their decisions and behaviour. Again, the approach of Bardhi and Eckhardt (2012) is used for the analysis of data with the six dimensions of access-based consumption revealing five outcomes:

1) Partial identification with product
2) Interplay of functional and symbolic value
3) Co-brand assurance and product quality
4) Co-branding effects on brand community membership
5) Perceived risk and trust.

The following sections narrate the five outcomes for the e-car club case study.

5.3.1 Partial identification with product

CCT focuses on consumers' *individual choices* and sees individuals as having agency over their consumption activities. Consumers construct their identities by consuming products or services (Belk 1988). The interviews offer evidence of different ways e-carclub members identify with their vehicles. For example, some regarded themselves as altruistic and committed to relationships because they drove their children to clubs and aged parents to medical appointments.

Most participants wanted to see themselves as independent and free to travel without having to plan their journey, depending on public transport or car club providers. Thus, these participants constructed their identity as free and independent individuals by driving their own cars. This was in line with Choo and Mokhtarian's (2004) claim that car ownership is attributed meanings of

freedom and independence. In contrast, alternatives such as public transport or car clubs require planning and reliance on the service. Participants struggled to identify with e-carclub because they wanted to appear able to drive people to places, even at short notice. This was difficult with PSS, as it required booking. Mike explained that he valued the flexibility to travel to a given place when he needed or wished,

> "...how much extra we would pay therefore in order to have the convenience of literally having our car sitting outside our door so that if someone says, (…) 'oh I need to be in school early or if I need to be', oh suddenly we've got to jump in the car"

This freedom to use their vehicle as they please was a defining aspect of how people constructed their identities, especially when they had families. For most participants, the uncertainty of EVs being accessible on demand, for example to assist family and friends in unplanned travel, was an obstacle to consume the e-carclub PSS. Here it is important to distinguish between REBUS and e-carclub. In REBUS' case, described in Chapter 4, the users were in possession of infant mobility products for a given period of at least 6 months (although they did not own them); with e-carclub, they accessed the electric vehicles when needed on a trip-by-trip basis which resulted in an association of e-carclub with lack of freedom and independence.

Familial relationships and associated commitments seemed to shape people's mobility needs. Single participants were more likely to consider the PSS offering than people who had families. For example, Guy was single, did not own a car and ordinarily travelled by bicycle. There were occasions however when the use of a car was necessary, such as when he needed to drive his visiting parents around or he pursued his DIY projects. The PSS offering enabled him to drive his parents to places with the EVs. Similarly, the e-carclub could also enable users who did not own a car to help people in a more severe need. As Guy said,

> "…recently (…) a friend needed to get to Wing and had just had an eye operation and couldn't drive, so I said oh I'll take the e-car and take you"

Thus, the PSS offering enabled Guy to construct his caring, helpful and trendy identity (cf. Belk 2014b) and he saw himself as "hip". Unattached participants who did not own a car, therefore, said that the PSS gave them *capability* to

assist other people. *Capability* can be thought of as a person's ability to achieve various valuable functionings as a part of living (Sen 1993, Nussbaum 2011). Functionings are the various things a person manages to do or be in leading a life and is linked to freedom to achieve goals when they want (Sen 1993).

Users of products accessed through the PSS did not want to see traces of previous drivers (cf. Bardhi and Eckhardt 2012) not only because of possible damage to the EV or the EV not being charged when they took it. As Mike explains,

> "*…there's a real sense in which I don't want it to be a social thing, I don't really want any trace of the previous person, I don't want to know who used the car. I don't want to know, I don't want to have their CD in the machine, (…), it even annoys me when I hire a car that someone else has got Radio 1 as the default whereas I would listen to Radio 4.*"

Sharing with unknown individuals seemed to be a threat to Mike's sense of identity. Seven participants made statements which demonstrated unwillingness to consume the EV PSS. One interesting example was Caroline, who was a proud owner of a Volkswagen Transporter (a type of van). As she explained,

> "*I have a VW Transporter and a VW Transporter has a kind of certain iconic image to it in that you can convert them so they may be used by people who like to do (…) a lot of outdoor sports*".

Like in Schouten and McAlexander (1995), the nature of the vehicle, which is iconic, made the user more interested in ownership. Because she wanted to be free to customize her vehicle, she was sceptical of PSS. Consumers want to be free to customize[7] their products for them to express their self-image better (cf. Mugge et al. 2009). They identify with the modified product and see themselves as part of a community of people who do the same. So as Caroline said,

> "*I've had a couple of people at work come and have a look at my van, oh you've got a van, and I've been to look at their vehicles 'cause they've modified them and, 'oh you've put this in and you've adapted that and you've got a drinks holder and you've got these special clips to fix your brackets to fix*

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[7] Customization was defined in Chapter 2.

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your bikes to the side and how did you do that?' You know. So there is a sort of kindred spirit (…) there".

Therefore, as in Schouten and McAlexander (1995), Caroline felt a sense of affiliation for like-minded people, so ownership of the van delivered a sense of belonging. Furthermore, the customization process itself creates a bond with products (Mugge et al. 2009), hence Caroline wanted to own her vehicle. Further, she said that e-carclub was "not me" (cf. Weiss and Johar 2013) and she did not recognize herself in a rented vehicle, which could not be customized. This offers an additional perspective on PSS averse consumers. On the other hand, some participants may have reacted differently and they may have identified with both the PSS and the EV. Guy for example said,

"…I like it as part of my image, I like the idea that I'm this person who, rather than just having a boring old car like everyone else has, tries to get around by bicycle and hires the e-car rather than just any old normal car. (…) I'm a person who's slightly, in a small way, doing something slightly different and interesting".

Therefore, Guy did identify with the PSS offering, which made him see himself as "trendy". This was in contrast with Bardhi and Eckhardt's (2012) findings, which indicated that drivers did not identify with the accessed object. Interestingly, although Guy initially said that he saw himself as a frequent user he then found, when looking at his booking history, that he had only placed a handful of bookings over a period of two years. In summary, we see that a small number of participants identified themselves with e-carclub and saw themselves as trendy, altruistic and environmentally conscious. These participants however were a minority, they were unattached and young and two were students. It is worth noting that some of the participants who identified with the e-carclub belonged to the Wolverton community. For most of the participants however, it was their own vehicle which supported their identity construction. Ownership itself was important for identification in line with Weiss and Johar (2013) and Schouten and McAlexander (1995) and they wanted to be able to personalize their products (Schouten and McAlexander 1995, Mugge et al. 2009). Finally, traces of other users affected the identification with the product as already noted by Bardhi and Eckhardt (2012).

5.3.2 Interplay of functional and symbolic value

As noted in Chapter 2, PSS literature focuses on PSS functional value (cf. Sakao and Shimomura 2007, Kimita et al. 2009a, Pawar et al. 2009, Sundin et al. 2009, Bertoni et al. 2011a, Geum and Park 2011, Niinimäki and Hassi 2011). Interviewees saw the electric vehicle PSS as able to deliver functional value. They could use the EV for shopping trips, to load DIY equipment for jobs in their house and for weekend outings. As Guy explained,

> "…*it's the Kangoo that I think I would use in future probably for the DIY stuff because I can get so much in it*".

This indicated that the PSS allowed users to rent vehicles suitable for special purposes, which suggested a utilitarian relationship with the PSS offering. However, there were functional disadvantages of the PSS. As seen in section 5.2, the e-carclub was designed to a round-trip model and was not intended for commuting or longer distance journeys. The structure of the charges for use made this prohibitively expensive. For example, to drive to work required a one-day rental and leaving the EV parked – then taking it back to where it was picked up. Because of this design and pricing structure, some participants said that the EV PSS was not convenient as it involved too much cost. Therefore, for these individuals the PSS was not able to deliver sufficient functional value. As Paul explained, e-carclub had

> "…*the limitation that it (the EV) has to go back to where it's going to be, that you pay by the hour so if you say, went for a three-hour meeting, you might only use it for 20 minutes but you're paying for… (…)   I've never took it to Northampton (where the participant works). I think the range would be all right, I think it would go there and back on a charge without too much problem, but I'd be there for eight hours, I'd pay for eight hours… it's a lot more than the train and the bus*".

Travelling to the place of work is an essential aspect of automobility for many car users. In this respect, the PSS seemed unable to deliver the functional value required. The duration and frequency of use of the EV is an important factor in shaping acceptance of the PSS offering (cf. Armstrong et al. 2015). O*ccasional* and *temporary* use could affect users' perceived value and shaped PSS acceptance (cf. Behrendt et al. 2003, Armstrong et al. 2015). As well as the temporary use*,* the setting was also important. In Wolverton, parking was

particularly difficult (terraced houses with limited on road parking). This discouraged ownership of a second car. The PSS therefore was considered a replacement for the second car to deliver functional value.

Since the e-carclub was designed as a round trip model, its core users were those who needed occasional local use of a vehicle rather than commuting. Users were intended to be those who did not need a car for commuting and would use train or other public transport for longer trips or would have used the e-carclub as a substitute for a second car. However, the interviews indicated that some e-carclub users fell outside of these groups and wanted more functionality than was being offered.

Participants also required symbolic value from this PSS. Meanings shaped the symbolic value the PSS offering delivered and the CCT analysis shows how this value helped individual consumers construct their identities and define themselves (cf. Richins 1994b). Some participants were "proud to be different". Participants saw themselves as "smart" as they had freed themselves of responsibilities of owning a vehicle, e.g. paying insurance, maintenance and road tax and finding spaces to park their vehicle. Younger, single individuals, male or females, who saw themselves as altruistic were interested in environmental protection. They associated e-carclub with novelty and seemed more favourable to take it up, as Donna argued,

"…*the green thing does matter, you know (…), having something that's, two cars is just bad for the environment, it's bad for the local environment in terms of parking and it's, you know, not good for the (…) environment more generally but also, we've thought about the electric car thing for the future".*

Some participants linked the symbolic value associated with environmental meanings and altruism with their political engagement, as Guy explained,

"*…when I was a teenager I went to some sixth form conference or talk, so this was years ago and there was somebody talking from the Green Party, all about looking after the earth (…) it really made a big impression on me and I thought, oh so we're talking about something like 1981 or 1982, you know, I think, it was called the Ecology Party in those days and nobody had really heard of these things very much and I thought, oh yes, I believe in all this stuff. And, I actually joined the Ecology Party for a couple of*

years and then I left, you know, but I think I always retained that interest in environmental issues… I've always been interested in politics in a, not in a very participatory way… I think environmental issues are political (….).

Paul offered a similar view as he narrated his decision to enrol in e-carclub,

"It was an ideological thing rather than being driven by something that was really practical. I thought it was a great idea, so better try and support it.

Therefore, his reasons to join e-carclub were

"Partly environmental, partly practical, to do with the amount of parking (available). Partly the idea that expensive assets such as car(s), should be functional and shared, rather than being status symbols used occasionally. So in terms of use of resources, it seemed a really good idea. (…) . If you are going as far as setting up a car club, why not making it electric, given that most journeys are ten miles or less?"

This suggests that e-carclub might have delivered an attractive symbolic value, which expressed meanings and ideologies these participants cared about. These political orientations made consumers more receptive to sustainable propositions because of an ideology which includes environmental protection (Moisander and Pesonen 2002). CCT theorizes that consumption may be shaped by ideology (Kozinets and Handelman 2004). This therefore might have made the PSS proposition attractive to consumers.

In contrast, there were key aspects of automobility that led to negative associations for this PSS. Most participants associated driving with fulfilling familial responsibilities. In this case, the PSS failed to deliver symbolic/hedonic value. For example, the participants said they thought they should be able to drive relatives to places in emergencies. As Caroline explained, she valued

"the comfort of knowing that if we needed a car, like we could have it in case of emergency or anything like that".

And similarly, Catriona,

"…if we need to be somewhere fairly quickly then you may find that the car's booked or it's out or it's reserved half way through the slot that you want".

In general, younger, single individuals (male or female) who were interested in environmental protection and saw themselves as altruistic were more likely to consider subscribing to e-carclub – although it was hard to see whether it was the type of vehicle, electrical, or the PSS pay as you drive offering that they associated with environmental values. Some could not afford a car – or they moved in a city and so car ownership was a challenge because of parking and congestion. In summary, these younger, single consumers could extract symbolic value from the PSS, which helped them construct an identity of "hip", trendy individuals who care for other people and the environment.

5.3.3 Co-brand assurance and product quality

CCT literature claims that a strong brand supports the trial of new offerings (Brexendorf et al. 2015, Sinapuelas et al. 2015), therefore the use of brands might facilitate consumption of the EV PSS offering. Brands and co-branding strategies were defined in chapter 2. Brands reassure consumers of a product or service's quality (Sheth et al. 1991). E-carclub adopted a co-branding strategy, which used the e-carclub brand, the brand of car and the brand name of the local provision partner. Co-branding can associate an offering with good causes such as sustainability (Till and Nowak 2000) and even places (Dinnie 2004, Hankinson 2010). Place branding is the place, region or country to which the brand is perceived to belong by its target consumers (Dinnie 2004) or a local community brand name. The results from the interviews seemed to indicate that a number of brands exercised influence on the participants, these included:

1) e-carclub itself as a brand;

2) the brand of car available for booking from e-carclub, e.g. Renault Zoe;

3) the brand name of the organization associated with the provision of the service at a local level. In the case reported here these were Wolverton as a community brand managed by Future Wolverton, the University of Hertfordshire and Watford City Hall.

As the interviews show, these brands worked in different ways with the participants. Considering the brand of EV, participants mentioned Tesla as the benchmark EV brand, particularly in respect to range. Few participants mentioned the brands of EVs available from e-carclub, which at the time of research were Renault and Nissan vehicles, apart from a case where the

participant referred to the Renault Kangoo because of its suitability to transport goods. Some of the participants commented how the purchase of e-carclub by *Europcar*, which is an established brand of car rentals (Europcar.com 2017), did not seem to add credibility to the PSS offering. The concept of car club itself, which is embodied in the brand name e-carclub, seems to have had ambiguous meanings. Guy notes

"…*as I understand it, E-Car (club) is part of Europcar or something like that and so really (…), the club thing is a piece of marketing*".

Juliette agrees,

"…. *I know it's all for marketing sort of reasons, you know, I just feel there's no such thing as a free lunch, they're offering me all this stuff and I know it's my information that they want*".

Thus, not all participants saw the PSS offering as a club despite its name. Belonging to a car club did not give them a sense of affiliation. Some participants saw the use of the term "club" for the PSS as a quasi-cynical marketing ploy to make the PSS attractive. Felicity for example, who was not a member, did not see e-carclub as a club, as she explained

"*It's a business transaction. I wouldn't see it as a club in the sense of a social club in any sense at all*".

Mike articulated this further,

"…*I think club is probably trying to make it sound more clubbable, if you see what I mean. So I'm a member of a sailing club, a sailing club really is as much a social thing …(a) Golf club, I want to know what their handicap is, I want to know whether they played well on the fourth green today or whether they chipped into the bunker on the ninth* (….) *I think e-car club is not that sort of club, an e-car club (….) would be more like, well you know, I've got a Tesco Clubcard, I don't hang out with people at Tesco (…) having drinks with other people with Tesco Clubcards, it's a commercial arrangement, it's a way of structuring a contract to make it easy and convenient for me*".

This evidenced the participant's views on the ambiguity of the car club name. Furthermore, some seemed to prefer it not to be a club, because members have responsibilities towards a club (such as contributing financially and with

voluntary work) and this would diminish participants' sense of independence and freedom, as participation to a club requires commitment in the form of duties to be undertaken[8]. As Guy explained

"…*when I think of a club I think of something that is owned by the members, has no shareholders and (…), its finance comes from membership and fees and all its money goes back into providing the members with something, yeah, I mean that's the sort of definition of a club that I would think of. (…) if you were in a real club, real clubs take a lot of time and energy from everybody don't they? (…) everybody would have to contribute to this, (…) then people would fall out and then you'd be short of members and then you know, there would be a lot of work (…) there's a lot of paperwork to clubs*".

In summary, participants did not see e-carclub as a "social club" they could be affiliated to. This partly confirms Bardhi and Eckhardt's (2012) findings that users are not well disposed towards a brand of car club. This reaction stands in contrast to the REBUS case study, where the PSS was not branded as a 'club' but as a commercial service. There, users were happy with the organisation through which the PSS was provided.

In contrast, branded mobile apps or "apps" had an interesting effect: for example, getting to a profile of car club through *Trip Advisor* seemed to lend credibility and help institutionalize the PSS. Apps are software downloaded in mobile devices through platforms such as Android or Apple Store in order to satisfy various demands" (Ghose and Han 2014). Uber, a global transportation technology company that enabled private drivers to deliver taxi services (Knight 2016) had its own branded app and this seemed to help participants trust their service. Trust was defined in Chapter 2, section 2.2.3. As Jaspreet said,

"*Uber has their own app, so they just have an app called Uber and you just download that and then whenever, like I told you the first time you use it they pay you back for your fare, and then you can just, anytime you need a cab, it just picks up your location, you can book a cab and it even tells you where the driver is…*"

Returning to the claims by Brexendorf et al. (2015) and Sinapuelas et al. (2015) on the role of brands in facilitating trial of new offerings, perhaps brands of apps may facilitate or induce consumption of the PSS offering at least in younger

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[8] For example, participation of Annual General Meetings and contribution of time for running the club

consumers and students. The next section describes the effect of the local community brand.

5.3.4 Co-branding effects on brand community membership

As seen in the earlier section, the brand name of local provider associated with the delivery of the service seemed to affect participants and interview data indicated that this influence was important. As Chapter 2 explained, brands create feelings of affiliation when consumers belong to a brand community, defined in Chapter 2. Participants associated the EV PSS offering with a local community brand name, Wolverton (cf. Dinnie 2004, Hankinson 2010). The participants that belong to the Wolverton group identified it with *Future Wolverton*, a not-for-profit organization (Futurewolverton.org 2015) and with the town itself. They identified with and thought they belonged to, the local community. Erin for example said that the endorsement of the Wolverton's local authority encouraged her to try the PSS,

> "...*the council had a banner because there's one parked right over, just right down the street...* "

This revealed that the local character of the PSS offering, associated with an established brand name had an important role in providing confidence. The association with Wolverton was also important for Guy, who came across through it,

> "...*suddenly, somewhere, on some mailing list or some website, I found that there was one in Wolverton. And you know how, Wolverton has a lot of people in it who are very sort of dynamic about doing things, it's that sort of place, you know*".

Therefore, belonging to Wolverton's community brand was important for Guy's identity as dynamism is one of the qualities he said he has. As Marie said,

> "*Wolverton as a place has a very, (…) cohesive community, people are very engaged in what goes on in this place and they care very deeply about it*".

Paul narrated how the launch of the e-car club in Wolverton was an important social occasion,

> "...*we had a really big, (...) event surrounding the cars. We had the cars parked in the middle of the square with balloons and banners and we had the Mayor of Milton Keynes cutting a ribbon with the local MP and we made a really big thing about it*".

In the case of the UH and Watford Council brands their effect seemed to be weaker. For some participants, UH and Watford City Hall were their employer. Some participants were students or past students at UH and in three cases, they could be considered "lapsed" members. Some of the participants who were employees of Watford City Council had been offered a membership but refused to enrol. In comparison, the Wolverton group seemed to be the most committed, perhaps because they felt a sense of belonging to a closer-knit community. The statements of the participants in the Wolverton group evidenced the importance of the local community character of the PSS for participants' sense of identity and affiliation. Users seemed to aggregate around a PSS "tribe" (cf. Cova and Cova 2002) or co-brand community. This had parallels with the REBUS case study presented in Chapter 4, where, whilst the product brand – Dorel Maxi-Cosi – had an important role, it was the PSS's link to the NCT brand that most produced a "brand community" effect.

However, as the e-carclub detached itself from Future Wolverton and showed less commitment to its community initiatives following acquisition by Europcar, Paul claimed that members started to lapse. As Paul explained,

> "...*Now, it's just an anonymous, it's been bought by some big multi-national, they just hire cars, and I feel no loyalty at all to them, in fact I'm not even sure I'll remain a member because there's no feeling of it being local at all, it's just a national service, just like buying gas or electricity or something*".

As for public engagement with local issues, Paul continued,

> "*I don't think they were really engaged enough in Wolverton's own issues and they had one model (of car) that applies to everything*".

All this indicated that within the co-branding strategy, the e-carclub brand was not the strongest. Participants were more likely to see themselves as part of a

brand community with an automobility PSS which was market mediated but positioned as a community initiative, in line with the findings from REBUS (see chapter 4, section 4.3.4). There may have been a link between increased commercialization and a reduced credibility of e-carclub as a community brand. The data seemed to indicate that as the supplier migrated from the original local community based strategy and became more commercial and part of a larger commercial group, users became alienated from the brand. Therefore, the local community provision offered meanings of affiliation, which were undermined when the EV PSS became more commercial.

5.3.5 Perceived risk and trust

Perceived risk and trust related to obtaining access to a product or service through a PSS as opposed to ownership. A first issue was a lack of trust in the service itself, the possibility that the PSS offering would not deliver the service. This is called service failure by Bitner et al. (1990, 54), *"when customers feel that there is a significant gap between their expectations and the actual service standards as a result of the service provider's failure to provide services or products that meet customers' recognized standards or service behaviour regarded as unsatisfactory by customers".* It is a situation in which the performed service is below expectation (Maher and Sobh 2014). Several studies, (cf. Bardhi and Eckhardt 2012, Catulli 2012, Firnkorn and Müller 2012, Cherubini et al. 2015) have identified reliability of the service as one of the concerns of consumers with PSS. Indeed, participants explained the risk that EVs may not have been available when needed. Sarah for example explained

"*I go onto the website, I just pay £50 and then I pay a fiver to rent it for an hour but if I ring up or I go online and there's nothing free, then if that happens several times that will become a bit annoying*".

Catriona, who was a member of e-carclub and an active user, explained that there was a risk of

"*...the inconvenience maybe of it not being available exactly when you need it or there's a reservation half way through the slot that you want*".

Lack of accessibility at the right time was therefore an issue with consumers.

Some participants who anticipated the possibility of service failure did not find automated booking to be reassuring; they would have preferred interaction with human service personnel. Juliette for example explained that she did not:

"*...like human-less things. I want to be able to ask a question. It's a whole, this is where obviously it's, this is where modern technology is trying to get rid of people and everything (is) automated. And if something goes wrong, then what do you do? Just imagine you get there, I'm going to hire my car, swipe the thing, it's not working, doesn't work, something electronic has gone wrong (...). There's no little person in a booth to say, sorry, this isn't working today*".

Lack of opportunities of contact with a human interface therefore seemed to undermine perceived service quality with concerns about service reliability and responsiveness (cf. Catulli 2012).

Another perceived risk participants reported was around the technology of the EV itself. They were anxious about the range of the EVs (cf. Lane and Potter 2006, Egbue and Long 2012, Cherubini et al. 2015). As Anna explained,

"*I think there's a danger to it as well. If you were to stop on the motorway, that's the first thing I'd think*".

Similarly, Guy who was an experienced user compared EVs to traditional cars,

"*going in the winter at night when it's raining, you've got your windscreen wipers on and your lights on, (...) your heater on and basically your time left is going down a lot faster than the miles you're officially allowed and I can remember when I was first using it thinking, oh goodness I don't think I've done that many miles (...) it feels (...) more worrying if you were suddenly (to) run out of electricity in the middle of nowhere than if you were to run out of petrol (...), you presumably have to get towed to a charging point*".

Furthermore, participants said they were concerned about lack of knowledge of locations of charging points, so the PSS was not considered reliable over long distances.

A third issue was that they might not trust other e-car club drivers and the provider. Bardhi and Eckhardt (2012), in their research, had found that Zip Car users were concerned about possibilities of contagion from previous drivers. The

interview results suggested that consumer choice to adopt the e-carclub PSS offering or not was shaped by distrust of other users which were not only associated with contagion but also with the working condition of the vehicle. They believed that other drivers might have transported dangerous goods or substances, as Juliette says,

"…is there somebody sitting there on site cleaning the cars? What if someone's just been sick in the back or something… or they've used it to transport something disgusting, you know, or asbestos or I don't know, something dangerous that they don't want to leave it contaminating their own car."

Participants were concerned that previous users may have eaten takeaway food in the EV and that they might find the EV not charged, as Sarah explained

"….it would bother me if I got there and there were McDonalds wrappers in there and it (the EV) smelt and it was uncharged".

Here the lack of action or an error by other drivers in recharging the EV might result in service failure. In addition, if the car was damaged, some participants had concerns about contractual liability for dents caused by others. Interviewees said they thought that the provider might have chased them for damages. As Hamad said,

"…if somebody had damaged the car, it could fall on me, (…), had I not seen it and informed these guys. (…) it's your word against mine, so I have to make sure that I check everything and if there is a small dent then I mention it, that just before it, this is what I saw and I'm putting it back because that could just backfire".

Some participants were concerned about being mistakenly charged by the provider for more than the actual use. This lack of trust in the PSS offering, in contraposition with a liking for the EV, drove one member of the Watford City Hall e-carclub to purchase themselves a Renault Zoe EV (the same she used to drive as e-carclub member). This confirmed Cherubini's et al. (2015) belief that an EV PSS might encourage the diffusion of EVs. In this case, the consumer had been recruited in EV automobility but had lapsed from the PSS, because she did not fully trust the PSS offering. The EV was trusted but not the car club. Some

participants did not sign up as members of e-carclub because of what they saw as shortcomings of PSS itself.

The participants belonging to Wolverton's setting differed from other participants, as they seemed to trust other e-carclub members, as they lived in a small closely-knit community where people knew each other. As Marie said,

> "...we, as a group of volunteers in Wolverton managed to secure the car club as an opportunity for the town. We had to get a public vote (…) we had to get local people to say, yes, we want Wolverton to have this opportunity. what's interesting about our experience is how that initial enthusiasm then translated into actually making the club work (…) we had a cake designed with the e-car, little e-cars on it, you know…."

This shows that Wolverton is a strong local community brand and is in contrast with the anonymity observed by Bardhi & Eckhardt (2012). This indicated that community brand membership might reduce anonymity, an inhibiting factor of PSS offerings.

5.3.6 Summary

The view of PSS consumption through CCT revealed aspects which are associated with consumer choice and individual attitudes. This is the individual perspective advocated by Whitmarsh et al. (2011) contrasted with the social-structural approach favoured by Shove (2010, 2011). Table 5.1 summarizes the results compared against claims by literature

Literature claims	Results
Consumers can be segmented in "open-minded" and receptive to PSS offerings or "ownership-orientated" and "consumption-orientated" (Meijkamp 1998, 2000, Hirschl et al. 2003). Car clubs users tend to be younger than 35, more educated than National average, likely to be employed full time (Firnkorn and Müller 2012) and have higher income than average Londoners (Le Vine et al. 2014b). They postponed purchase of new cars or even gave up car ownership (Ibid.)	Consumers' identities were associated with different amenability to PSS. Older consumers with families were likely to choose to own vehicles to be able to assist other family members or friends. Younger, unattached individuals were more likely to choose the PSS offering, as they were free from responsibilities towards other family members. Students were better disposed because e-carclub might have provided their first opportunity to drive, considering high insurance costs of ownership.
Consumers who are open to meanings of environmental protection (Moisander and Pesonen 2002) and are driven by ideologies associated with sustainability (Kozinets and Handelman 2004) are more likely to adopt sustainable consumption	Individuals interested in meanings of environmental protection and novelty showed greater interest in the PSS offering. Participants who had an ideology of environmental protection and political involvement in the past seemed more likely to choose PSS offering.
Users of car clubs have higher income than average Londoners (Le Vine et al 2014), younger than 35 and more educated than National average (Firnkorn and Müller 2012)	Consumers who associated the PSS offering with meanings such as hipness, trendiness and cost-effectiveness seemed to be more receptive to PSS offerings. Some of these participants were younger and unattached. Altruism was an ambivalent meaning as some participants associated it with car ownership and others with the PSS.
Users of access based offerings associate the offerings with contagion and prefer anonymity (Bardhi and Eckhardt 2012)	Anonymity, the reluctance to interact with other users, also shaped relationships with the offering. Participants did not want to see traces of previous occupants of the EVs and they may have chosen not to adopt the PSS offering with this rationalized justification.
Products that have symbolic value for consumers are problematic for PSS (Schrader 1999, Scholl 2008). Consumers develop relationships with iconic vehicles (Schouten and McAlexander 1995, Schulz 2006) and prefer to own them. Consumers may want to personalize and customize these products which generates emotional bonding to products (Mugge et al. 2009)	Relationships of consumers with products shaped PSS consumption. Some consumers attributed special meanings to iconic vehicles. For them personalization of vehicles was necessary to identify with those products. For this reason, these consumers found it necessary to own vehicles and therefore rejected the PSS offering.
Tukker (2015) emphasized the importance of control over the product for acceptance.	Results suggested that claims that control is the main issue shaping PSS consumption are reductive. On demand availability seemed to be a factor affecting whether these individuals identified or not with the EV PSS. Freedom to use, adapt and personalize products as they pleased were also aspects for acceptance. These aspects however differently affected participants depending on their identities.

Table 5-1 Summary of findings from CCT analysis

The account above revealed that some types of consumer identities were compatible with the EV PSS and yet e-carclub had growth issues which mirror Vezzoli's et al. (2015) implementation challenge. We see that even participants, such as Paul and Marie, who tried the EV PSS, ultimately let their membership lapse. Others became dormant members, as evidenced by Guy's realization that he was using the service less than he thought. The account informed by CCT indicates that the choice not to keep consuming the PSS may be caused by migration of e-carclub from a community to a commercial brand but there may be further explanations. Section 5.4 explicates a social-structural description of PSS consumption through PT and explores why some types of consumers, despite favourable disposition, chose not to consume it recurrently beyond an initial trial.

5.4 Practice theory view of consumption of e-carclub

As was noted in Chapter 2, in contrast with CCT, which focuses on consumer choice (Arnould and Thompson 2005, 2007), PT focuses on how practices that are socially established and shaped by social convention and structural aspects are performed by consumers (cf. Warde 2005, 2015). When they perform their daily practices, human subjects in this perspective are restricted by the constitutive elements of social life, such as social conventions (Warde 2005) and social structures such as *Materials*, *Competences* and *Meanings* (Schatzki 2010), defined in Chapter 2.

The following analysis used a Practice Theory framework to explore automobility practices and how they are performed, the links between elements within the practice and links between the practice with other practices. The focal practice of the study is automobility. Human subjects with their own vehicles, rented or leased vehicles, can perform automobility. In this chapter, participants performed a modified focal practice that was not yet established and therefore following Shove et al. (2012) is identified as a proto-practice in the narrative. The proto-practice of analysis was *self-directed automobility using an electric vehicle (EV) use orientated PSS*. The elements of the proto-practice include:

- *Materials*, including EVs with charging cables, access and fuel cards, charging stations, parking bays and mobile phones and apps to book driving slots

- *Meanings*, including freedom from responsibility of ownership[9], capability, environmental protection
- *Competences*, including driving skills, journey planning and ICT skills

Following Mylan (2015), the analysis identified three outcomes of the focal practice by interpreting the data across the five dimensions of materials, competences, meanings, processes of appropriation and appreciation seen in section 3.4.2.2. The sections below explicate how the elements interact in the focal practice for the e-carclub case study involving:

1) Practice Dynamics
2) Coupling of Practice Elements
3) Links between the practice and other practices

5.4.1 Dynamics of practice

Automobility in current everyday life in most western countries is shaped by the current socio-technical landscape (Watson 2012). This socio-technical landscape has developed in response to growth in private car use (Norton 2008) and has features that impact upon the introduction of EV PSS. Humans move in space between dispersed places of work, shopping and recreation and this creates stability for incumbent automobility practices which are performed using private vehicles (Watson 2012). Car ownership therefore is considerably entrenched (Pojani and Stead 2015), in spite of a small fall in the EU as a whole (Le Vine et al. 2014b). In major Western cities, there is a trend to restrict circulation of traditionally powered vehicles (Pojani and Stead 2015) because of pollution (Lane and Potter 2006), congestion or parking difficulties. This is particularly relevant in Wolverton where most houses have little space for parking. The price of fuel has also risen, partly because of Brexit in 2016-2017 (Martin 2016). Concurrently, despite slow diffusion, EVs have been making headway (Egbue and Long 2012, Walsh et al. 2014). There was also growth in diffusion of charging stations (Vaughan 2017), facilitated by local authorities and, increasingly, by private companies, (https://www.zap-map.com/live/). The

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[9] Ownership entails human beings to use their property when and as they want, but it also involves responsibilities, such as possible damages to others of using their property (Snare 1972).

University of Hertfordshire for example installed several charging stations in its local area (Walsh et al. 2014) – see figure 5.3.

Figure 5.3 A charging station on Campus - University of Hertfordshire

The growth in diffusion of EVs has brought some conflict between stakeholders, e.g. traditional cars were found parked in recharging stations (Watford-City-Hall 2016). These could be considered exogenous dynamics of the Focal Practice (Watson 2012). Exogenous dynamics involve links or competition between practices, as *"processes of change (….) are rarely entirely endogenous to the practices concerned"* (Ibid. 491). Whilst the socio-technical landscape made traditional automobility practices obdurate, some exogenous factors favoured the diffusion of EV PSS.

Further dynamics of change to practices involve changes in relationship between the practice elements of materials, meanings and competences. Negative

meanings of environmental damage by conventionally powered cars were increasingly recognised (Air-quality.org.uk , VCA), particularly for diesel cars (Harrabin 2014), although this has limited effect in changing practices performed by people by private car because of the exogenous factors discussed above, such as the need to travel between physically disperse sites. EVs became progressively more efficient, for example, they have improved mileage ranges (Walsh et al. 2014). Driving electric cars was increasingly associated with positive meanings of environmental protection circulated by the media (Clarke 2017, Vaughan 2017), which also disseminated competences (Vaughan 2017) as well as shortcomings (Bomford 2013). Therefore, the increasing associations of automobility practices performed with diesel and petrol private cars with negative meanings may produce favourable meanings for electric cars. These associations could also produce favourable meanings for car clubs in general, because they are reported to reduce the number of miles driven (Le Vine et al. 2009).

Elements of practices migrate from and to other practices (cf. Shove et al. 2012) and in automobility, it has become increasingly common for drivers to use mobile phones as route planners. Therefore, elements that underpinned communication practices, such as apps, have migrated into automobility practices. Many users of the e-carclub would be familiar with using apps for automobility, so using the e-carclub app to support tasks such as booking and recharging EVs and journey planning would become part of automobility practices.

Practices may diffuse following the migration of elements. The practice of automobility through car clubs had been introduced from other countries. Erin for example is American and when she came to the UK following her marriage she noticed e-carclub and she

> *"…looked into it because we do something similar in the States called Zipcar… So I was already looking for something like Zipcar…"*

Similarly, Guy learnt about car clubs from a relative living abroad, he

> *"…knew about car sharing schemes because my second cousin, who lives in Copenhagen, was in one and I always thought, and I chatted to him and said, oh what a good idea, we don't have them in England yet".*

This might have supported diffusion of the practice elements in the context explored, as they travelled from places where they consumed by human subjects that were already prepared to receive them (cf. Shove et al. 2012). Locally, e-carclub codified and circulated meanings and competences through leaflets. These included instructions on how to drive and connect the electric vehicles (EV) to the charging stations. E-carclub also produced Videos and made them accessible through youtube.com[10]. The local associates facilitated circulation of materials as they allocated parking spaces to EVs (Futurewolverton.org 2015, Watford-City-Hall 2016). Both provider and distribution associates such as the University of Hertfordshire promoted the use of smart phones and apps to book the EVs (Copsey 2016).

The strategy of e-carclub collaborating with local authorities, community associations and universities had a key role in the circulation of elements. The interview data suggested that existing members in Wolverton had shared the meanings of *cost-effectiveness, environmental protection* and *social responsibility* of the PSS offering. This was less the case for the interviews with e-carclub users based at UH and Watford City Hall.

In short, endogenous dynamics of automobility practice through the PSS offering included the circulation of materials such as more efficient EVs and mobile phone apps to book them and of positive environmental meanings through media communications. Competences to book and drive club vehicles were introduced in the UK from other countries where they were already diffused. Exogenous dynamics included raises in fuel prices and changes to the socio-technical landscape in the UK such as growing restriction of circulation of traditional cars.

5.4.2 Encouraging trial and repeated performance of practices

The interview results suggest that e-carclub's strategy of collaborating with local authorities, community associations and universities was successful in encouraging practitioners to try EVs which ultimately further diffused by social contagion (cf. Pantzar and Shove 2010). Most users reported that they were introduced to e-carclub by a colleague or friend or as part of a launch linked to

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[10] for example youtube.com/watch?v=eMdw-qts8Zk

a social function attended by individuals the member knew. As Donna explained, people said

"'…oh this is interesting, is it your car, (…), oh you're part of a club', so I think actually in some ways it might be kind of quite a good advertisement for the company because people will have, maybe not have heard of it, you know, 'oh I didn't know that existed', so I think there would be a lot of interest. (….) I can only imagine that other people would probably want to know more about it because, you know, if it is going to save you money and it is easier and if I'm telling people really positive things about it, then they're only going to want to jump on board…"

This included other students, colleagues and neighbours. In a few cases, an existing member had driven around a person who then became a member before they were enrolled. Guy explained that he actively encouraged people to try e-carclub,

"…I proselytise about it and I think that's given me the impression to myself, falsely, that I use it more than I do".

These results indicated that the proto-practice (cf. Shove et al. 2012) of automobility by means of EV PSS is first established as a community initiative and is encouraged by a sense of belonging to that community. In the case of Watford City Hall, the communities were participants' employers and were students for the University of Hertfordshire. For Wolverton the sense of community came from the Future Wolverton community group. Human subjects were encouraged to perform that mobility practice by sense of belonging to that community. As a result, participants subscribed as members of e-carclub. However, there were participants who tried and subscribed but then lapsed from the focal practice.

The practice failed to be recurrently performed and reproduce (cf. Ibid.) and did not become collective as it failed to make links with other practices performed on sites human subjects travel between, such as work and recreational activities. This was partially because e-carclub was a round trip model not designed for commuting. Participants perceived this as a shortcoming because they would need to pay for the rental whilst the EV was parked on site, before driving back to the pickup point where it was taken. They therefore saw e-carclub as unsuitable for their travel needs.

As Warde (2005) explains, a "spatially dispersed nexus of doings and sayings" (Schatzki 1996,89) requires recurring performance to become an established practice practitioners can be recruited into. Here the proto-practice of automobility by e-carclub fails to become established as a practice because of its inability to connect disperse sites of practices in a cost-effective way for participants. Therefore, in Schatzki's (1996) conception, the proto-practice was not recurrently performed, had not become collective in nature and had not integrated with the socio-technical landscape.

5.4.3 Links between practice elements

Materials to perform automobility included the electric vehicles (EV) themselves and additional materials included charging cables stored on board the EV. Materials also included two ID cards, the first to access EVs and the other to access recharge stations. Additional materials were used to access EVs: mobile phone, tablets or laptops and the web sites and apps to book driving slots. EVs had considerable on-board electronics for navigation, including to charging locations. Infrastructure included charging network and parking spaces.

Electric vehicles were appropriated (as described in Chapter 2) by driving. The EVs were used for a variety of practices where a vehicle was needed for transport. In most situations, transport was not of value in itself but was a practice coupled with those of the purpose for which the travelling was taking place.

Competences - materials were linked to specific new competences (cf. Shove et al. 2012) which were necessary to perform automobility through the EV PSS offering. New competences included driving EVs, which involved journey planning to locate charging stations and connecting and disconnecting the vehicles for charging (e-carclub.co.uk 2015). Driving electric cars required drivers to learn to plug in and unplug EVs to charge batteries and E-carclub drivers were responsible for leaving EVs on charge for next users. Navigational skills were needed for longer trips because EVs short range required charging stations to be planned into the journey. Generally, all participants were positive towards EVs but associated them with *range anxiety.* New driving techniques were required and the novelty made some participants unconfident, as evidenced by Donna's statement:

I was absolutely terrified (…), it took me a while to build up the confidence and I had to go out with (my partner) first and drive it on my own somewhere quiet (…), to get the hang of it and then I watched YouTube videos, I mean the instructions were clear but I felt I had to kind of watch YouTube videos first.

Participants were afraid of keeping the car beyond their booking period (an issue of car clubs as a whole), as Guy explained

"…I went to this poetry reading at the Somme commemoration and then everybody said, oh let's go down the pub (…), and it looked like a lovely pub in Wing and I said oh I'm sorry I've got to get the e-car back because I'd only booked it (…), till…"

Here users were concerned about fines for returning EVs later than the booked time and contractual financial liabilities for not returning the vehicle in good conditions, e.g. dirty or damaged. Participants were not all *equally* confident of having the required competences to perform automobility through PSS or access practices, as Jaspreet's statement suggested

"…the negative thing is if you damage it then of course you're (….) liable for higher charges and that would have been (….) we're not really experienced drivers, like me, I'm just focusing on me and my friends. (…) my friend she rented just recently from E-Car Club and just about a few weeks ago (…) she had hit the wheel by mistake (…) and now she should pay like a £200 charge"

Drivers of EVs provided through the PSS used competences in their use with materials such as mobile phones, computers and apps to book the EVs. Following migration of these elements (cf. Shove et al. 2012) that underpinned communication practices into automobility practices, it became increasingly common for drivers to use mobile phones to manage automobility. Thus, as explained in 5.3.2 elements of communication practices integrated with those of automobility to support tasks such as booking EVs and journey planning. As Jaspreet explained

"…booking it from an app, that's definitely a really good idea because a lot of students are lazy so (it) is easy to just quickly go on your phone and just know that you can book it from there, that's definitely good. A lot of students have smart phones (…) so if you can just, (…) download the app and every time

you need a car, (…), just being able to directly book it from your phone, then being able to collect it is very easy".

Drivers needed to perform access practices and learnt associate competences to perform automobility provided through PSS. Access practices can be defined as *performances of activities required to gain the use of materials temporarily as needed.*

Access had its own materials (phone or laptop with apps to book the EVs), competences (using apps through mobile phones) and meanings (the control granted by booking through laptop and even fashion value). Some of these practices were recurring, collective and socio-material (using laptops or mobile phones to book the EVs). Indeed, access is a practice that is instrumental to PSS. Practices can become part of other practices (Watson 2012), so access became an integral part of the proto-practice (and therefore the PSS automobility offering) and it became a daily mundane practice human subjects needed to perform in their automobility.

Learning the practice of access produced some anxiety as revealed by Donna's previous statement. Remembering passwords and log in names seemed to be a problem for some participants, used as they were just to board their own car parked outside their door.

As part of access practices, E-carclub automobility also involved travelling to where EVs were parked, which may have involved additional forms of mobility, usually walking and maybe traveling by public transport. Practitioners, however, seemed strongly against combining different modes of transport, including even walking. Felicity for example needed to carry heavy loads to the EV which she needed to take to her place of work,

> *"…it would be a real hassle even just walking to the bus stop with this bag of books".*

Here access was problematic and participants preferred having their own car parked on their drive because of the practical inconvenience to carry materials to the EV. The use of mobile phones and apps to book and access the EVs seemed to give *younger* participants a sense of *control* and *ease of access*, which perhaps helped associate these meanings with the PSS offering itself. From comparing the participants' responses, it appeared that younger participants – students for example, such as Jaspreet as seen in section 5.3.3 –

were more likely to associate these meanings of access practices to apps, as they were familiar with them. In short, the focal practice, as it integrated two innovations – PSS as a way to access products for use and, secondly, EVs – integrates elements of both the innovative aspects of automobility which all needed to align (Mylan 2015) in order for the proto-practice to diffuse. Many of the competence misalignments were actually about the car club rather than the use of EVs.

Meanings – Traditional mobility practices performed with practitioners' own vehicles were appreciated with meanings of *familial responsibility* towards the practitioners' family members, such as taking children to school and aged parents to medical appointments, even in emergency. As Chapter 2, section 2.3.8 explained, *appreciation* is the process of attributing meanings to materials and practices (Warde 2005). Cars were considered materials that could be used to meet these responsibilities. As Felicity explained

> *"….my niece (…) is 17 and she's just about to get her driver's licence and in her family there's three kids and two parents but her father doesn't drive and so her mother has to do all the driving. (…) my niece is putting in a huge argument for why her parents should buy her a car, and her mother wants to and her father doesn't. And her mother's reasoning is, (…) there would be another adult to take responsibility for driving the other kids around to various places".*

Participants thought that using owned vehicles was more flexible than using EVs accessed through the PSS offering to enable them to meet these familial responsibilities. Mike explained that the PSS would not give enough flexibility

> *"…if one of them (his children or their friends) says, oh I need to be in school early or if I need to be, oh suddenly we've got to jump in the car…"*

Participants with families therefore said that the PSS did not *enable* them to fulfil *familial responsibilities* towards family members, as it did not offer flexibility for unplanned use. Participants said that they needed a car parked next to their door. In this respect, the proto-practice was *not* appreciated with *capability.* However, younger, single people and students might have performed different mobility practices– the practices to which the EV PSS is coupled were different and so their view of it was more positive. For example,

they may not have owned a car because they mostly travelled by bicycle and public transport. However, they might have needed to drive a car in exceptional circumstances to help relatives. Guy for example explained that booking an EV from e-carclub was a good solution,

> "…*when my mum and dad came for the weekend and I wanted to take them to Stowe (….) and again there was no public transport so the e-car was ideal"*.

In contrast with the case of people with families therefore, young, single people and students could indeed appreciate the EV PSS with meanings of capability and affordability to fulfil their responsibilities to friends and relatives, as they may not have been able to afford to own, insure and drive cars to do so. The reason for this is that for the practices which they performed, they did not need the instant access to the EV PSS that existing owned car users expected.

Traditional automobility performed with the participants' own cars was appreciated with *altruism* because it enabled drivers to help other people travel. However, participants associated negative meanings with conventional cars because they were sources of pollution. In contrast, automobility performed using e-carclub was appreciated with *environmental protection.* This meaning, however, motivated users with families *less* than the capability associated with driving their own car to fulfil perceived responsibilities to assist other family members. For younger, single participants without children, it was the proto -practice which was appreciated with altruism because by performing it they could assist people which they would not have been able to otherwise, as they did not own a car. This was another example of the coupling between practices' elements leading to different responses from different participants.

The proto-practice was also appreciated with *freedom* from responsibilities, e.g. parking, maintenance and taxes but on the other hand, it was appreciated with concerns about contractual *liability* for possible damages to the EV. Freedom was thus limited by this contractual liability towards the EV PSS provider. As Mike explained, the PSS did not give enough freedom, as with his own car

> "….*we used to throw all stuff in there, wetsuits and things and occasionally we'd even put a boat on the roof and things like that, we had a roof rack, so we usually use our car as a workhorse and you know, messing up your own car is fine but if you're messing (a rented car), is someone going to say,*

oh you've scratched the car here, you know, and then they're going to have to pay a fine or, you know, someone's going over the car with a magnifying glass and saying, oh you've scuffed this or that, if it's not my car, I can't sort of treat it in the cavalier fashion".

This is akin to what was identified in the REBUS case study when users were concerned with liability for damages to the rented products. Whilst automobility using a car owned by the driver was appreciated with *independence* (cf. Choo and Mokhtarian 2004), automobility provided by PSS was less so. Some participants associate the PSS offering with meanings of *cost-effectiveness*. There were some notable positive meanings of the PSS automobility offering, which was considered a "hip", modern, "clever" practice. It was also associated with *novelty* and *modernity* – because of the EV but also because of the practice of booking the service using apps. In Guy's words,

> *"I was quite proud when my mum and (dad) turned up, I said, oh I'll take you out in the e-car, because it's quite a snazzy thing"*

Traditional driving however was more appreciated with meanings of *safety* than the PSS offering. As Caroline explained,

> "*This looks brilliant, you know, I get my membership, I get my PIN number, I swipe, I do this, I do that, you know, obviously it's fairly automatic in that there's not that many people around, you know, it's kind of manpower efficient, but you know, what if something goes wrong?*

Therefore, the proto- practice seemed less safe because of lack of assistance if the EV was not in working condition. On the other hand, for some practitioners the proto- practice was appreciated with meanings of *health* because car ownership invited to use cars every day, as Jaspreet said,

> "…*if I do use it on a day to day basis I become lazy, so actually having, you know, (…) being able to rent a car is much better because it still kind of encourages you to walk around, be fit, but only take a car when you really, really need it*".

Overall, appreciation of automobility with social responsibilities and the perceived better reliability of owned vehicles to fulfil these appeared to have a "lock in" effect of traditional automobility with private cars. Traditional

automobility practices were therefore obdurate with most practitioners. PT research however shows differences in consumption between groups. Older consumers for example were more likely to uptake Nordic Walking (Pantzar and Shove 2010). Similarly, automobility PSS had potential with younger, trend-conscious practitioners. For those who were very comfortable with mobile phones and apps, the practice had more chance to become institutionalized (this might have been linked to age, income and level of education). Therefore, these different identities of consumers shaped uptake of the PSS offering more favourably.

PT does not reject deliberate behaviour (Warde 2017) but pays less attention to the internal mental processes of individuals (cf. Swidler 2001, Shove et al. 2012). However, what PT does provide is that these individual differences of human subjects can be considered compatible with certain sets of practices and not with others. If participants had not adjusted their lifestyle to practices made possible by the prompt availability of a private car (e.g. if they just gained their driving licence and their first driving experience is e-carclub), then the EV PSS does provide a better match. In summary, research in the personal identities of practitioners may offer useful insights.

5.4.4 Links between the practice and other practices

Automobility, in general, is linked to other practices such as working, shopping and DIY (cf. Watson 2012). These practices can include those performed by friends and relatives, for example attendance to school and other educational practices, sports and leisure activities and even medical appointments. These practices bring about responsibilities towards family members engaged in them as seen in 5.4.2. As Felicity explains, her sister had to take her younger siblings to activities

> *"…like to brownies and choir and those kinds of things, so at the moment it's always Karen and if Kathy had a car then she could also take on some of that responsibility and ease the burden on Karen".*

These practice links create responsibilities, which human subjects have to meet. The focal practice, automobility through PSS often fails to match well with such responsibilities associated with the practice. For some other practices there is a better match, for example DIY practices as these are performed rarely, are planned and are short term. An example was the previously mentioned use of

the e-carclub Renault Kangoo to perform the proto-practice for DIY by Guy when:

"(*I) need to buy something big for doing the house up, you've got a real problem, you know (…), you really do need to hire a car so when I've had to get big rolls of insulation foam and anything like that, I've used it*"

Therefore, as he did not own a car, the PSS offering enabled Guy to transport materials to perform DIY practices without having the burden of car ownership. Furthermore, participants stated that the EV PSS was inconvenient for most work-related travel as drivers needed to pay rental charges even for the time when the car was parked, which would not have occurred with their own vehicles. Limited distribution network and limitation to round trips therefore made access to materials too costly for practitioners. Paul claimed that the PSS offering did not easily support commuting to work, because

"….*one of the restrictions is you've got to return it to where you took it from, so it's great for, I'm going to go shopping and come back, that's fine, it doesn't work if you're going somewhere, having an hour's meeting, then going somewhere else because you're paying for the time at which you're not using it, when it's sitting outside.*

Section 5.2 explained that the e-carclub was designed as a round trip model and therefore was not configured for commuting. However, the interview data suggest that some participants saw the PSS as a means to travel for professional reasons. Therefore, a major source of obduracy of traditional automobility was its link with the practice of commuting and other work-related travel. In comparison, the proto-practice struggled to link with these practices. The need to carry heavy equipment needed for work to the vehicle (which might be parked far from home) when taking it was a problem and made participants decidedly averse to multimodal mobility and the proto- practice. For Felicity, the traditional mobility practice was linked to her work activity. The proto-practice therefore was challenged by the need to transport heavy loads in her work as a home teacher to kids who were unable to attend normal schools. For her it was

"…. *the hassle of getting to the site (where the EV is parked), so the nearest site to me was Watford, so that's 15 minutes' drive away, I could travel by bus which would take an hour and cost £8 and probably wouldn't take*

me to the destination and what if I'm carrying things which are heavy? Which I am all the time, I've got these huge bags I take into all the kids I teach".

The current sociotechnical landscape meant that:

1) people might have needed to travel far to work and hence would need a car;

2) charging infrastructure and distribution network of e-carclub EVs were insufficient.

In short, the link of traditional automobility with a number of other daily, mundane practices performed by human subjects (cf. Watson 2012) had the potential to shape the consumption of the PSS automobility offering. Some of the daily practices they performed, such as traveling to work and driving other people to places might have been a source of obduracy of automobility performed by human subjects by using their own cars. A PSS offering of electric cars was therefore considered at best a secondary, backup automobility practice. On the other hand, links with practices such as DIY were easily established by automobility through accessed EVs. However, the provision of a van as part of the e-carclub PSS was at only one site and vans rarely feature in car clubs at all. Discretionary travel such as weekend travel for leisure may have encouraged PSS automobility; however, links with activities which were more difficult to predict and plan, such as taking children to sports events or parties and parents to hospitals could make traditional automobility obdurate. The exploration of the dynamics of automobility practices through the e-carclub PSS offering revealed difficulties in integration of practice elements and links between automobility and everyday practices, which may make uptake and establishment of the automobility practice using the EV PSS difficult.

5.4.5 Summary

Section 5.3 showed that from the CCT point of view, some types of consumers may have chosen to try the PSS offering but ultimately failed to consume it consistently. Interview data identified consumers that differed in their levels of competence in performing automobility through PSS. Those human subjects who were more familiar with mobile phone apps, such as younger people, might be more suited to perform access and could therefore be possible carriers of the proto-practice (cf. Shove et al. 2012). The account from the PT point of view, favoured by Shove (2010, 2011), in contrast with the individual choice

perspective favoured by Whitmarsh et al. (2011) showed how structural aspects, social conventions and the socio-technical landscape prevented the uptake of the automobility practice using accessed EVs through a PSS. Table 5.2 summarizes the insights.

Literature claims	Results
PSS like provisions are associated with community values (Briceno and Stagl 2006, Vaughan et al. 2007)	Framing the proto-practice as a community initiative helped appreciate it with meanings and disseminate competences to perform it and encouraged human subjects to perform it. The appreciation of the practice with community meanings supported circulation of meanings, competences and materials. However, as the PSS became more commercial and less community based the proto-practice ceased to reproduce and did not evolve into a practice.
Elements of proto-practices, including materials, meanings and competences need to be linked within the proto-practice for it to be established (Shove et al. 2012, Mylan 2015).	Practices elements included meanings such as familial responsibilities and capability. Practitioners said they felt responsible to help friends and relatives on unplanned travel to places such as sports events. This was problematic for uptake. Capability and familial responsibility could not be linked within PSS offering. Other important meanings were associated with the PSS offering however, such as environmental protection and freedom. These encouraged some participants to perform the proto-practice.
Practices become part of other practices and integrate in systems of practices (Watson 2012). Elements migrate between practices and become part of new practices (Shove et al. 2012)	Access is a sub- practice integrated with the proto practice and therefore with the PSS offering. This entails the migration of elements from other practices, e.g. mobile communications, to support access to the EVs.
Practices are likely to enrol specific types of human beings (Pantzar and Shove 2010)	There were individual differences in how the proto- practice enabled activities of different types of participants and importantly, their facility in learning access. These differences were discussed in section 5.3.
New practices or proto-practices (Shove et al. 2012), need to be recurrently and collectively performed and gain socio-materiality in order to get established (Barnes 2001a, Schatzki 2010). This involves establishing links between elements within the proto-practice and links of the proto-practice with other practices (Shove et al. 2012, Mylan 2015). The incumbent practices may be more or less free to align to integrate PSS, depending on the tightness between elements within the incumbent practices and the links with other practices, which make existing practices obdurate (Ibid.) as a result of their integration in complexes of practices (Shove et al. 2012)	Failure of the proto-practice to link with practices such as work commuting impeded the stabilization of the proto-practice. The traditional focal practice lacks freedom to align to integrate the PSS offering because of the obduracy created by its integration in complexes of practices. The proto-practice was not established because it failed to establish links. The PSS linked well with certain sets of other practices and in such cases, it represented an attractive option to certain types of people. These performances however did not recur because of failure to link to human subjects' mundane practices. This helps explicate how even consumers who initially performed the proto-practice eventually dropped out of the PSS offering.

Table 5-2 Summary of results from PT analysis

In short the proto-practice failed to gain the essential practice characteristics of recurring performance, collectivity and socio-materiality (Schatzki 1996, Reckwitz 2002) and therefore to become established as a practice. The next section discusses how insights may be gained by comparing CCT and PT views.

5.5 Discussion and conclusion

The above sections presented a case study where, although also a use-oriented PSS, it differed from the REBUS case study set out in chapter 4, in that users accessed products – EVs – for short-term use. In the REBUS case, users kept possession of an infant stroller or car seat for 6 months. For e-carclub they retained the car only for a specific trip. This difference affected user response to the PSS offering.

In the e-carclub case, the characteristics of the offering which concerned users included lack of on demand access and reliability of the offering. For example, a user could find that the EV had been already booked and therefore no EVs were available in the desired time interval. In addition, a user could find that a vehicle had not been charged either because of lack of time or user error. As in Bardhi and Eckhardt (2012), users also objected to risks of contagion, where the vehicle was not clean or it could have been damaged. This was consistent with an offering where products were shared with others and traces of other users could be observed. Finally, access needed to be performed with each use, so it needed to become a routine, daily activity.

In the case of REBUS, by comparison, access and return of the product was performed only at the beginning and at the end of the service interval. Once the product had been delivered, users retained possession of car seats or strollers for an agreed time interval and therefore they were not concerned about not being able to use it. The quality assurance process addressed concerns about contagion. One element that is common between cases is potential financial liability that could result from damage to the product. This contradicts the notion that users would be careless and opportunistic when they use products that do not belong to them, which Manzini and Vezzoli (2003) and Bardhi and Eckhardt (2012) claim could be a problem for PSS providers.

CCT based analysis of the case study offers insight on the role of consumer individual choice and deliberate behaviour in PSS consumption. Interviews

showed that in some cases, participants simply chose not to consider the PSS offerings, with various reasons, varying from affinity with materialistic meanings, wish to appear independent (cf. Choo and Mokhtarian 2004) and to have control over their vehicle (cf. Tukker 2015), so they could use it as they pleased (Snare 1972). As claimed by Karanika and Hogg (2012) these participants' identities seemed to be shaped by their ownership of cars. Participants therefore chose to use their own vehicles, as they seemed to feel they could draw positive symbolic value from products they owned (Richins 1994b). Some interviews also suggested that ownership of cars or vans signified affiliation with other owners of the same type of vehicle (cf. Schouten and McAlexander 1995, Cova and Cova 2002, Schulz 2006).

Belk (2014b) however, claims that consumers can also identify with accessed products, so that a PSS could offer symbolic value and aid identity construction. Interviews indicated that some participants saw themselves as different, trendy and smart compared to others. They were younger and might have been similar to types of consumers Craig-Lees and Hill (2002) call voluntary simplifiers, these participants might have been inspired by ideologies that made them more concerned with meanings of environmental protection (Moisander and Pesonen 2002). These consumers seemed to be able to identify with the PSS offering as Belk (2014b) claimed. Interviews also revealed that consumers felt affiliation with communities of users, where the PSS was associated with community values of a community-based club.

From this identification with accessed EVs and associated meanings and with communities, these consumers could be expected to choose to take up PSS consumption of electric vehicles. Yet despite initially enrolling in e-carclub and trying electric vehicles on access, they lapsed as members, so PSS consumption was abandoned. Individual perspectives such as CCT offer as an explanation *justification strategies* (Eckhardt 2017), where consumers use a rational or rationalized justification to decide not to take up the offering. Examples of these justifications from the interviews include contagion – they did not want to see traces of previous users or could not rely on the PSS. Lack of on demand availability and reliability were also rationalized as negative aspects of the PSS. Much of this response related to issues around the car club concept, although some were to do with EVs. This perhaps articulates more fully Tukker' (2015) claimed importance of control and Catulli's (2012) and Schrader's (1999)

concerns with on demand availability. In the interviews, these justifications included for example costs of keeping the vehicle parked at work. One of the angles of deliberate behaviour that perhaps CCT was able to pick up was a certain animosity to the change of the character of e-carclub from local to corporate provision following purchase by Europcar.

PT based analysis offers alternate insights. Similar to what CCT revealed, meanings were coupled with traditional automobility practices based on user owned vehicles. Thus, participants valued automobility practices through private vehicles because this was associated with capability to assist relatives, which meant that participants could freely (cf. Sen 1993) rely on their own vehicle to meet familial responsibilities towards family and others. Automobility practice through car ownership therefore was associated with reliability and even more importantly, flexibility, as drivers could simply appropriate vehicles at will.

PT revealed that automobility using a car club PSS was associated with meanings that motivated some practitioners to perform it. Importantly, PT offered the insight that performing automobility practices using the PSS offering also required users to perform access practices. Access was an aspect of the automobility proto-practice. In PSS consumption, from the point of view of practice theory, access becomes a routine, mundane practice, which practitioners need to learn to perform to access a product. This significantly changed the automobility practice, as it involved significant planning and ICT skills. A detailed understanding of access may therefore be necessary to understand PSS consumption. The interview results showed that participants needed to develop the competences associated with access and some practitioners were better at this than others. For many participants access was indeed a problem and a source of concern. This insight enriches the notion of justification strategies as seen in individual approaches.

The interviews suggested that a strategy of implementation in association with a local community facilitated the diffusion of the PSS. This outcome is comparable to the observed affiliation with a brand community of parents in REBUS. The community organization supported the circulation of meanings, competences and materials. For example, reserved parking spaces were offered to install charging points and host the EVs. Performance of the proto-practice was encouraged for members of these communities. A sense of belonging to

these communities was a key element that encouraged trial of the offering (cf. Vaughan et al. 2007). This insight chimes well with the concept of brand community affiliation highlighted by CCT. Whilst with REBUS the brand community was characterized by parental circumstances and was not territorial, with e-carclub the sense of community was local. A crucial aspect however was that members dropped their membership of e-carclub when the company distanced itself from the community to become a more commercial operation.

The interviews showed participants were concerned with the range of EV and with inflexibility of the PSS offering. Such concerns were associated with the nature of this use orientated PSS which did not, unlike the one presented in REBUS, involve possession of the product for a substantial interval of time, which was a minimum of six months. Similarly to the REBUS case study and in line with Mylan (2015), traditional automobility practices were coupled with other practices such as work. Driving was partly used for commuting. Since e-carclub was designed as a round trip car club as defined in 5.2, this limited the opportunities to use the e-carclub, practitioners saw this as a limitation and so they preferred to drive their own cars. This in turn seemed to make the traditional practice more obdurate because people still said that they saw automobility as motivated by professional pursuits and would not abandon mobility by private car as they wanted to be able to depend on it to travel to work. This confirms Watson's (2012) claims concerning the importance of the socio-technical landscape, in particular locations of work and living and lack of availability of travel alternatives in shaping consumers' preference for private cars. In Mylan's (2015) words, therefore, the practice lacks the freedom to align with the PSS offering and the latter fails to uptake.

CCT and PT based analysis of the data, because of their specific focus on individual agents and practices, revealed different aspects that might have shaped PSS consumption. Whilst some types of consumers were willing to choose sustainable PSS offerings following inspiration by various meanings and ideologies associated with environmental protection, PSS consumption contrasts with socio-structural aspects including responsibilities that these consumers had to go to work and support their dependants within the socio-technical landscape. An interpretation considering justification strategies could require interventions to encourage uptake of automobility PSS mainly based on communication strategies, including consumer education not only on the benefits of the offering

but also on the techniques necessary to use the PSS. However, a social-structural view could inform a different range of interventions, for example PSS design, which could opt for a point to point car club model, defined in 5.2, simplification of access practices and could anticipate the limitations of the PSS concept that could inform strategic decisions such as limiting the remit of the PSS, including conclusions on its feasibility.

This chapter considered views from a PSS where products are accessed on a single use basis from an individual choice and social-structural perspectives. Key messages are that structural aspects have a stronger shaping influence on automobility PSS. Compared to REBUS, access is an important aspect of PSS consumption and service failure is a possible outcome of PSS consumption which has the potential to affect consumers' confidence. The next chapter therefore considers strategies to draw insights from the results emerged from the separate CCT and PT based analyses and to compare the two case studies.

6 Approaches to understanding PSS consumption

6.1 Challenges to the two perspectives

Following the Consumer Culture Theory and Practice Theory based analysis of the case studies presented in Chapters 4 and 5, this chapter discusses how to make sense of these two sets of results. As Chapters 2 and 3 explained, CCT and PT are incommensurable and the analysis of the two sets of results cannot be combined. With these differences, as Chapter 2 explained, drawing on Hammersley (2008, 9) only a "dialogical strategy" is possible. Plurality of approaches needs to be maintained in research to preserve a diversity of perspectives (Stirling 2011). Attempting to unify and integrate frameworks and reducing diversity causes reductionism (Ibid.) in addition to producing a lack of rigour in research as indicated by Jacobs and Frickel (2009) and Graff (2016).

Midgley et al. (2016) sets out ways to use pluralist approaches, which were outlined in Chapter 2. This chapter explores how an approach can be used to provide further understandings from the two case studies that is both theoretically and ontologically pluralist as it uses two different theories and objects of analysis, individuals and practices. As part of this exploration, the issue of valid pluralistic analysis was the subject of specially arranged expert validating interviews.

Three possible positions might be explored to make sense of the two streams of results based on CCT and PT:

1. To use CCT and PT in a pluralistic fashion, i.e. without any attempt at integration
2. To integrate them at the point of design of the research, which call for a strategy to operationalize this integration
3. A middle position, where the research design adopts use of CCT and PT in parallel, analysis of the two sets of results is performed separately, some sort of connection is made between the two sets of results after analysis and findings are reported.

To investigate which of the three positions can allow for the sense making of the two sets of results generated in this thesis, expert advice was sought via:

1. An expert workshop conducted at the PLATE conference in Delft in November 2017. The workshop was attended by a group of 15 individuals split between professional academics and doctoral students in Design and Sustainability. A guiding paper (Catulli et al. 2017) and a set of worksheets (shown in appendix E) had been circulated to the participants prior to the workshop.
2. Three interviews with experts:
   - Professor Alan Warde (at the time at The University of Manchester) from the PT field;
   - Professor Giana Eckhardt (at the time Royal Holloway College, University of London) from the CCT field;
   - Dr. Helen Roby (at the time at Coventry University) from the Social Marketing field.

In this narrative, for brevity, the three experts are designated only by first names. Details of how the data were collected and analysed are reported in Chapter 3. The following sections report the results of the interviews in narrative and conclusions are then drawn.

6.1.1 Possible rationale for combining perspectives

Alan and Helen suggested that one should consider what "using" perspectives together means and what one is trying to achieve. Helen questioned the primacy of theory in favour of a pragmatic approach. She proposed that theories could guide the design and structuring of research, rather than being the end result. This position questions the use of theoretical approaches in isolation. There are multiple approaches to research, some being more pragmatic, others more theoretical and these differ amongst research communities. An orientation towards pairing frameworks is also affected by the type of problem the research addresses. For example, as Jacobs and Frickel (2009), Fielding (2012), Turnheim et al. (2015), Geels et al. (2016) and Graff (2016) claim, sustainability is a "throwing everything at it" issue. As a workshop participant said:

"*Sustainability is such a complex context - a theory of everything - that you never know when to stop, so that such a complexity may just demand combining approaches*".

This agrees with the call by Barry et al. (2008) for interdisciplinarity in sustainability studies. No theory is complete and all-comprehensive. As Helen said:

"*You need to accept that there is no theory that ticks all the boxes. The real world is "messy"; flexible; not one theory can explain how the real world exists. You may have to combine some parts of different theories to address the real world*".

Complexity is therefore one of the reasons why each theoretical approach has limitations. CCT for example tends to focus on ways in which consumers make and justify their decisions. Consumers may adopt justification strategies by rationalizing these decisions, for example with financial or practical disadvantages of sustainable products. CCT researchers may tend to take this as explanation of behaviour, therefore overlooking material and structural causes inhibiting behaviour (cf. Dominici et al. 2013), for example, when consumers do not consume sustainably for reasons beyond their control. PT in contrast investigates how social practices may limit consumers' freedom to make choices and therefore explain failure to adopt sustainable consumption with the constraining effects of the social and structural landscape in which human subjects perform practices. However, this may preclude understanding of details of consumers' thinking behind their behaviour (cf. Swidler 2001, Shove et al. 2012). The two explanations may possibly coexist, however researchers from the two fields may reduce complexity by excluding one of the narratives.

Alan listed three stages of consumption: *acquisition* – acquiring materials for use through market exchange*, appropriation*- using things to perform practices - and *appreciation* – which is the aesthetic aspect of consumption, giving meanings to it. Of course, acquisition is important - people need to have things to perform practices and the mode of acquisition shapes how things are used. It appears however that PT dedicates less attention to acquisition, which generally, for most practices, seems to be seen in the past (people already have things to perform practices with) and possibly on the individual aspects of appropriation. In effect Pantzar and Shove (2010) claim that suppliers have limited ability to shape how elements such as the products they supply are integrated, which limits the ability of supply side initiatives and by derivation of consumer choice, to engender sustainability. Helen indeed viewed PT as rather

one-sided. In particular, she argues that the focus on the social dimension precludes insights on individuals' decision as already noted by Swidler (2001). In her words:

> "*You cannot separate society from individuals - because society is made up of individuals. Their attitudes and awareness need to be changed to make societal changes. So it is about an interplay (top down / bottom up) at all time - it cannot just be top down*".

Consequently, Helen argued that to understand what is going on makes it necessary to combine parts of different theories to address the real world. Her position is pragmatic, relying less on theory and more on achieving understanding to inform action. She felt that structure is insufficient to explain and inform intervention for change. These changes cannot happen without strategies to change people's attitudes and perceptions about habits such as smoking. Of course, this conception, which psychology commentators informing social marketing share (cf. Ajzen 1991, Fransella 2003) is apparently in opposition with sociological approaches, i.e. individuals have limited options in response if structures constrain them (Giddens 1984). In Helen's narrative, as society is made of individuals, changes in attitudes were necessary to usher legislation. As in her example of smoking cessation campaigns, socio-structural change is necessary but not sufficient, it:

> "*…is not only bringing the law about, it is also accepting it. As an example, a law against smoking in public places was introduced in France but it completely failed. However, it was not supported by a corresponding change in attitudes and values..*"

…which could have been brought about by a communication campaign. In Helen's view, some theoretical perspectives tend to be what Scherer (1998) calls isolationist, they

> "*…have a very silo view of how to do research (a cultural issue). Tend to be very theory based. Not practically based*". They are not "*that keen on seeing things in the real world*".

Alan, in turn, claimed that some stakeholders see applied research as requiring pluralist approaches. He explained:

"*…when we come to actually intervening in the world the reason why policy makers do not want a sociologist of a psychologist or an economist (actually they do want an economist) is that the single perspective of a discipline (is limited). They think that interdisciplinary work - which is the flavour of the decade - probably the century - makes sense when you want to intervene because you see a variety of different angles on the same sort of topic*".

Therefore, the pragmatic expectations of some research stakeholders, which may include funders, is that different perspectives of a problem can be useful.

The participants to the PLATE expert workshop suggested that there are very important aspects of contrasting CCT and PT that are necessary to understand consumptionscapes. For example, if looking at parental practices such as those explored in REBUS, PT fails to explore the emotional (psychological) dimension of the relationship of the parent with the infant and with the object (pushchairs and car seats). As one participant said:

"*The relationship with baby is NOT captured by the meanings of PT. That's why CCT can complete the picture*".

A further point raised by workshop participants was that CCT and PT overlap, although conceptually they may be treated differently. One example is meanings (although CCT conceives meanings as appealing to the individual, as opposed to meanings as attached to "collective" practices according to PT). Alan offered the cessation of smoking as an example of successful application of individual behavioural approaches where there are overlaps in individual and structural elements. In this case, individual reaction to passive smoking and health reasons and structural change, such as ban of smoking in public places, came together. This supported his view that more than one perspective helps to provide a more complete understanding.

In the example of the real implementation of an automobility PSS, as seen in Chapter 5, several approaches could be relevant, such as Psychology (e.g. fear of contagion), Economics (e.g. costs) and Environmental Management (to work out environmental impacts) and even Political Science (for interventions to incentivize adoption & diffusion). Identity projects are relevant to PT as well as to CCT - however they are not always in line with what people do. As Alan explained:

"*…people do pursue identity projects, they do think about it, they do talk*

about it... (however) what they do may have very little to do with their identity projects. People are concerned about how much water they put in their kettle... but they fly to the other side of the world to the Bahamas for their holiday. Holidays are in one compartment; every day consumption is in another compartment."

Identity projects also work their ways through practices. People want to become better cyclists...better sociologists. This can involve changing the practice or reaching a level of competence in respect to the practice.

Different contexts can be more accommodating for particular theories. Some contexts may be even more accommodating and suitable for multiple theories, for example in action research or other pragmatic applications. The political context and academic cultures often shape the preference towards one type of theoretical approach over another. For example, Alan claimed that Sociology of Consumption is not developed in the USA, where CCT has in effect developed and where the dominant constructivist paradigm is anthropology.

Helen considered that the diversity of context determines the suitability of a framework over another. In some contexts, for example there may be more autonomous agencies than in others, the smoking habits case being a good example. Energy usage however, according to Helen, is looked at differently from smoking or alcohol; there is no "one size fits all". Social Marketing however does not raise issues only on the individual, it may target organizations to lobby for changes in regulation or even investment. Helen suggested that researchers do not always start from a theoretical standpoint and theoretical perspectives do not always inform some examples of areas of investigation, such as Transport Strategy.

The PLATE workshop participants suggested that one reason to combine perspectives is the familiarity of researchers with both the theoretical domains as well as the analytical expertise needed to build understanding from CCT and PT. As one participant says,

"...*If you become an expert in both, you can wear the two hats while you are analysing the data. If you do not combine and do not allow to build on each other then you may be missing insights*".

This would encourage researchers to "compare" outputs in order not to miss opportunities for insights, if they were aware that they were looking at two different sets of data. Giana thought that pragmatic reasons could bring behaviourist and sociological frameworks together. Action Research for example can be a context which can justify pairing the two approaches.

There are contrasting attitudes to research of policy makers, funders and academic researchers. Users of research are interested in interdisciplinary work as noted by Alan, possibly for pragmatic reasons, as they are interested in actionable results. Another reason of course is that, as non-professionals, some stakeholders may not necessarily appreciate the role and objectives of theoretical perspectives. Be as it may, this interest in interdisciplinarity corresponds to the observations of Wall and Shankar (2008), Jacobs and Frickel (2009) and Turnheim et al. (2015) presented in Chapter 2 on the importance of pluralist research. Table 6-1 summarizes the insights of this section.

Summary
- Use of pluralist approaches or multiple perspectives need definition and understanding by researchers involved in it and a rationale for adopting it or objectives to be achieved (cf. Rossman and Wilson 1994, Fielding 2012)   - The type of problem the research purports to address guides use of multiple perspectives (cf. Robson 2011)   - Different theories lead to different explanations and possibly different policy interventions   - Some disciplines might be more isolationist than others and therefore their exponents might be less open to combine approaches (cf. Scherer 1998)   - CCT and PT have overlapping concepts, e.g. identity projects and meanings (cf. Shove and Warde 2002)   - Research context, such as country of investigation and type of education or research system shapes the hegemony of one approach over others and likelihood that perspectives are combined. For example, Robson (2011) notes that pragmatist research approaches originated in the USA

Table 6-1 Summary of insights

6.1.2 Incommensurability of CCT and PT

The previous section offers reasons to justify developing dialogues between perspectives on PSS consumption, in this case between CCT and PT. Broadly, these experts support a connection between CCT and PT as this provides a more

complete understanding but where and how such a combination of accounts is to be achieved is another matter.

This section explores the problems arising in setting up a dialogue between CCT and PT. Whilst a combination of perspectives may make sense in applied research, as Alan explained:

"…. *They usually don't add up theoretically. If you are really interested in theory, it is very difficult. I cannot share the same assumptions of rational action of an economist or other theorist. They are not the same assumptions. Behaviour - or some sort of behaviour - is better understood in these kinds of ways and not in the same ways than rational action theory. Theoretically, they do not add up. In practical terms they often do*".

There is a sharp divide between theories that look at what is going on in terms of behaviour, attitudes and intention, such as economic or psychology theories, and theories that look at social explanations and hence a collectivist view. Alan said that combining these different approaches in an interdisciplinary fashion could not work because they start from different assumptions. For example, a view of consumers from the perspective of neo classical economics - as rational decision makers motivated by value maximising decisions based on cost - benefit analysis - may not necessarily coexist with a view of consumers as selecting a brand for emotional, self-identification reasons such as in CCT. Alan finds it interesting to compare different branches of economics (e.g. behavioural and neoclassical economics) which never directly question each other. Other important issues are the objectives and agendas of each of the disciplines themselves. Researchers from each discipline have their research programmes (Knudsen 2007) and these guide what counts as valid, relevant contributions to knowledge. Hence even when addressing a funded project, academic researchers have their own objectives which may contradict the objectives of the funders. Helen even suggested that friction between people with different research backgrounds could make these collaborations demanding and difficult to manage. The collaboration between academics from different backgrounds can be hampered by their interest in different questions and objectives - by what Knudsen (2007) calls different research programmes. These very programmes may even make working with other stakeholders, such as funders, difficult and require compromises, such as addressing objectives funders have

interests in, which may be diverging from the researchers' primary objectives (Stronach et al. 1996, Mesny and Mailhot 2007, Harris et al. 2009).

Environmental sustainability is a research field in which theories focusing on individual behaviour change - be they based on behaviour changes, attitudes - have failed. Alan expressed a belief that using theories of individual behaviour change to inform sustainability policy will fail. For example, it is not useful to persuade individuals to use electric cars when there is no charging infrastructure. Similarly, when the accepted convention is that individual car ownership gives rise to feelings of independence, then uptake of car clubs is challenged. Importantly PT also emphasizes routines, the everyday life of people which is not based on deliberation, such as driving to work every day despite stating a commitment to environmental protection. PT therefore usefully helps identify sources of unsustainability (Shove and Walker 2010) and study how innovation in mundane practices beyond "visible consumption" (Shove and Warde 2002), emerge from the co-evolution of incumbent practices with novel elements (Shove and Walker 2010), such as heating and domestic energy use.

According to Alan and Giana, CCT and PT overlap in several ways, for example in how meanings have roles in both, although CCT focuses mainly on "sayings" and PT on "sayings and doings". Giana saw CCT as an "umbrella" term which encompasses several distinct approaches, including early versions of PT, as CCT has been greatly influenced by authors who also contributed to PT, such as Bourdieu (cf. Joy and Li 2012). Phenomenological approaches rooted in CCT, however, are incommensurable with PT, as they conceptualize consumers as deliberate agents making rational or emotional but rationalised decisions. Recent versions of PT informed by innovation studies (cf. Shove and Walker 2010, Watson 2012), of which Giana is well aware, moved further away from CCT as the latter overlooks material culture (Dominici et al. 2013). PT in contrast starts from the assumption that structural, socio-material aspects shape consumption. PT therefore does not attribute agency to consumers, rather agency lies with practices. Importantly, in the light of what Alan stated, since practices are recursive, collective and socio-material (Schatzki 1996, Reckwitz 2002), they differ in the number of human beings involved (scale) and time horizon. As Alan explained about investigating practices,

> "*I am also interested to know whether there are 1000 people to do it - or*

500 people or 10,000 - I want % and proportion - I want quantitative data as well as qualitative data".

With the change in smoking habits, as Alan said:

> *"…everything was moving in the same direction. This is good, so we have cultural change, societal change, structural (impossible to smoke in the very places where smoking could have a social role). Which is an example of the need to look at many points of view. Individual health was an obvious personal (individual) motivation. Regulation, huge evidence - e.g. you cannot smoke in front of me because you would kill me - more than killing yourself. But - It took 50-60 years."*

This is a radical difference of PT from CCT, which focuses on a limited number of individuals and on very personal insights. These individual perspectives give two very different interpretations of the same phenomenon of the failure to adopt sustainable consumption. CCT explains this by assuming that consumers devise justification strategies. These are rationalized explanations of what can be a rational conscious OR sub-conscious decision. As Giana explained:

> *"…to me that has been a very fruitful way to analyse - in all sort of interviews analysing exactly what you are describing. I think of different types of different justification strategies that different* groups *of people use and why they use different ones... but to be honest with you there is no consumer group you can find - regardless of how ideal the structural elements are - that are engaging in exactly the ethical behaviour that they say they want to…It could be subconscious. I am not saying that they are actively looking for excuses, it can be subconscious but in the end, I think people do not want to adjust their life in any substantial way. They do believe in these ideals on some abstract level but when it comes down to them making any substantial changes to their life style they typically do not want to make these changes".*

Therefore, individual consumers resist changes in life style, for example shifting commuting from driving to cycling, and justify this resistance with rationalized reasons such as risks or performance. Giana says she doubts that the problem is in the tension between structural aspects consumers cannot control and their determined desire to change. As Giana says,

> *"…this idea that it is the structural elements that they cannot control as*

the why they don't do it, I am not so sure that's true."

Giddens (1984) claims that individuals have some ability to break from social structure, although their actions are still shaped by cultural aspects (Kitchin and Howe 2013), what Giddens (1984) called "memory traces". Giana however believes that the justification strategies consumers develop help explain why they do not implement what they say they want to do, which means that they have agency and their decisions are of consequence. CCT does not deny cultural influences (Arnould and Thompson 2005) but focuses on individual subjective deliberation. Alan is as critical of individual behaviour accounts as Giana is of structural ones. In his view, action on sustainability informed by behavioural change approaches:

"…*will not be able to bring about change because you would apply levers at the wrong point. All big behavioural change programs to do with environmental sustainability have almost entirely failed".*

PT explains it in a different way, based on socio-structural aspects, as people follow conventions and are "straitjacketed" by the socio-technical landscape. As Alan explains,

"*The best emphasis if we are thinking about consumer behaviour is likely to be on consumer habits and interconnections and social connections and situations requiring certain responses (…) in some cases they say things that are different from what they do, whether they would like to do something rather (than) what they actually do".*

What is important in theories of practices is that human subjects are engaged in many different practices, which they perform to achieve contrasting ends and achieve contrasting effects and human subjects have limited freedom to reduce these contradictions. For example, human subjects might perform practices that aim to achieve sustainability, such as recycling behaviour, whilst at the same time be engaged in unsustainable practices such as frequent flying for professional reasons. Hence, there are contradictions between people's identity projects and their doings. The individual identity projects of consumers do not necessarily determine collective outcomes. This is an important reason why CCT and PT are incommensurate, as they present individual (CCT) vs collective accounts (PT). Individual consumers can take deliberate initiatives in their

consumption but social-structural aspects can prevent these behaviours to recur and to reproduce socially and become collective. Therefore, CCT can focus on a few individuals that have specific ideas, projects but these do not necessarily affect social practices. Power is one of the explanations; individuals do not have the power to direct practices, so their doings are pre-structured. Therefore, PT is interested in people's sayings and how their doings differ from their sayings. As Alan explained,

"*…if I want to give an account of practices I do want to know what people think about things, I do want to know what they say, I also want to know what they do. PT would say that people are inserted in a lot of different practices - and practices do not quite necessarily move in the same direction*".

Since practices are collective, recurring and socio-material (Reckwitz 2002, Schatzki 2010), scale is important. The practices that Alan finds more interesting are those that are performed by many people. This makes PT incommensurate to CCT because of the focus of the latter on smaller scale phenomena (e.g. on individuals and small groups making consumption choices).

PT tracks changes that occur over time, over years or generations. Since it is a collective view and practices need to be established and stabilized, practices evolve over a long time. CCT on the other hand looks at changes that are individual or in small social groups. They therefore may occur over a shorter time horizon, although CCT also looks at long term events (e.g. change over the life cycle of individuals). In short, despite some overlaps, CCT and PT are incommensurable and cannot be directly combined. Table 6-2 summarizes the insights of this section.

Summary
• Incommensurable perspectives may be bridged for pragmatic reasons   • In some cases, perspectives have common understandings, for example, CCT and PT both have "meanings" as important construct. Their understanding however is different, meanings as they appeal to individuals Vs meanings as they shape social action   • Combination between these perspectives does not really add up theoretically because they have different objectives, different assumptions and different research programmes. For example, CCT looks at individual (or small group) short term action, PT looks at collective, socio-material action with an extended time horizon perspective   • These contrasts are not only intellectual, they may generate conflict between different positions, including conflicts of interests

Table 6-2 Summary of findings

6.1.3 How to make sense of CCT and PT accounts of REBUS and e-carclub

Having discussed the issue of incommensurability above, this section discusses how sense making is possible using the two different sets of results. Giana agreed that it is very possible to have a dialogue after the analysis, and interprets the findings of research her own way. Alan agreed that making sense of results by interpreting and comparing between the parallel accounts of CCT and PT is legitimate:

"Practices (…) are very multifaceted, so you need different sorts of knowledge to understand different aspects of the practice. So Craig Thompson or Holts (two prominent CCT experts) when doing their work are bound to tell me some aspects which are interesting and useful in relation to the story I would want to tell, to show how all hangs together (…). I use what they find out but I interpret it in a different way - I weave it into my story".

It is… "…possible to have a dialogue; possible to come up with similar insights. The problem is with the analysis itself. I struggle to think how that can be done together. But once you have finished the analysis and you are talking about the insights that have come out of it, then I think it is very possible to have a dialogue. I could absolutely dialogue with that, maybe I would have done the same research project (on cycling) viewing the people themselves and

they would have talked about this but I would have focused more from a phenomenological perspective on things like having them talking about what the specifics were in terms of their experience, so they perhaps would say well actually it is really a problem when it rains...they would talk about their specific experience, where in Practice Theory their experience would not be relevant, because it is just about the structural variables insights that would say something like "well, if bike share programs had rain jackets included when you got your bike, it would help to overcome this and that would come out of the particular experience."

Of course, Giana offered this expert opinion in the course of an interview and was not able, for example, to consult sources or otherwise explore the problem in detail. In Giana's view, however, data analysis from a CCT or PT standpoint needs to proceed separately because the analysis is the stage when correlation between elements and phenomena emerge and assumptions support these correlations. For example, consumption of private cars could be narrated from the assumption that an individual consumer identifies with a brand of car seen as a status symbol (which may be linked to the *acquisition* of that brand of car) or in parallel, it can be considered a collective practice in *use* of consumers in their routine travel to work. The two theories look at different aspects, such as how consumers identify with consuming behaviour vs. the practices they participate in during their daily routines. The conclusions are that CCT and PT lead to competing, mutually exclusive explanations, potentially indicating different sets of interventions. In the case of PT, Alan explained the different implications of the two different interpretations for policy interventions to drive change. He suggested, for example, that appeals to individuals through behaviour change strategies generally do not work in initiating change because consumers are often unable to change their behaviour due to socio-structural constraints. Watson's (2012) account of automobility illustrates this by revealing the failure of most consumers to switch to sustainable travel because of their necessary mobility between disperse locations. CCT's view, on the other hand, is that people simply do not want to change their lifestyle - so the obduracy of unsustainable consumption stems from consumers' own resistance to change. From this point of view, behavioural change strategies, such as social marketing campaigns do make sense.

However, Alan and Giana agreed that in applied theory, for example when advising policy makers or undertaking action research, CCT and PT can dialogue, as the researchers juxtapose the two different sets of results and try to make sense of them, of course after separate analysis. Therefore, the PT output can inform structural investment, regulation and legislation to shape conventions and CCT investment in communications. In summary, both the experts in the two fields agree that the CCT and PT based analysis of data needs to be conducted separately and in parallel and a dialogue between the perspectives can proceed after the analysis. Table 6-3 summarizes the findings.

Summary
- Use of two different perspectives in pluralistic fashion does not necessarily imply that data collection must be separated. In fact different approaches can build understanding on pre-existing secondary data   - Results from a perspective can be read from another perspective after analysis.   - Data analysis however must be performed independently, because a theoretical perspective supplies a "reading lens" which guides the aggregation of data into nodes and themes. For example, CCT emphasizes experience (from the individual point of view), PT emphasizes action)   - Differences between perspectives are important because they can inform different policy interventions. For example, CCT might inform communication strategies whilst PT may inform infrastructure investment   - Pragmatic reasons might shape dialogue between perspectives (cf. Johnson and Onwuegbuzie 2004). Policy interventions might encompass both communication strategies and infrastructure investment

Table 6-3 Summary of findings

6.1.4 Design Issues

One question about pluralist research is whether a research project should be designed as pluralist at the onset or whether decisions of juxtaposing results could be made later when two parallel studies were completed. In Chapter 3, it was explained that the research reported in this thesis followed a flexible design. In a flexible design, the design may emerge and develop during the research (Robson 2011). Further, a design may emerge (Johnson and Onwuegbuzie 2004) or be altered (Rossman and Wilson 1994) in the course of a pluralist study.

The discussion with Helen touched on the alleged dichotomy between applied and academic research, also discussed in Robson (2011), who says that "applied research projects" have a different focus than academic research, where "the

main concern is with developing and extending an academic discipline" (Ibid, 3). Helen conjectures that applied research differs from pure academic research, such as research conducted as part of a PhD. As she volunteers:

".... a PhD is a very academic piece of work - it is not real-world research"

By which, she means that whilst academic research abides to established paradigms, real world research tends to be more eclectic. This point of view is certainly controversial, Blaikie (1991) for example warns against combining incommensurate ontologies and epistemologies, a widely accepted position as documented in Chapter 2 (cf. Shove 2011, Stirling 2011, Marshall and Rossman 2016). Of course, whether all PhD programmes avoid combining approaches can be debated, see for example Rossman and Wilson (1994). Helen's claim nevertheless enjoys some corroboration, for example, Robson (2002, 2011) supports this dichotomy between applied and academic research as seen above. Combining approaches may be seen as unorthodox however. Helen proposed experimenting with combining approaches, which implies a certain level of risk of wasting resources when these combinations do not work. She proposed taking stock of what a given theory offers and what it does not. In her view, if people from different theoretical backgrounds collaborate, then it might be easier to conduct the research from a pragmatic stance. From this point of view, pragmatic researchers chose an eclectic rule and advocate combining perspectives which can be useful (Johnson and Onwuegbuzie 2004, Robson 2011). In Helen's opinion, in collaborative projects involving researchers from different academic persuasions an approach that views theories instrumentally and prioritizes empiricism (cf. Johnson and Onwuegbuzie 2004) would be better than the theoretical route.

A research design involving two different frameworks from the beginning would be challenging, especially if it involved multiple researchers. Alan recounted that in his experience he:

"...worked on a project where some economists, some psychologists and some sociologists - all working on the same data set, which was a big [retailer]. Based on the loyalty card data but - who buys what in their stores over many years. In the end the economist wrote something which was based on econometrics and quarterly shifts in the sale of products, the psychologist did some experiments in laboratory with students about the speed at which

advertising clips went across the screen and we (the sociologists) looked at the relationship between people's social position and the amount of money they spent".

Alan's example shows that researchers may not necessarily be interested in collaborating and could just be interested in doing their own thing. The specialists would proceed in parallel and conduct the work separately. The output of Alan's work was:

"…separate, because there are different questions, different problems, different things matter to different people".

So all this suggests that the outputs of a pluralist research project should be juxtaposed at the end rather than be designed as pluralist at the onset. Robson (2011) conjectures that many academics resist being involved in pragmatic research including multiple perspectives, preferring to remain in their "ivory tower" (Ibid. 4), subscribing to those schools that may be seen as isolationist (cf. Scherer 1998). This emphasis on pragmatism, an attention on the practical effects phenomena could have in real life (Johnson and Onwuegbuzie 2004) may "help improve communication among researchers from different paradigms (Ibid. 16).

According to the participants in the expert workshop, a project drawing on CCT and PT would have to be designed from the beginning to allow the relevant questions to be asked and tasks allocated. In contrast with Alan's claim that he can draw on the finished results of others, the workshop participants felt that research needed to be designed at the outset to combine heterogeneous data. The different nature of the participants to the workshop, mostly from the field of Design and including professional academics and PhD students, might explain these differences in orientation. Table 6-4 summarizes the insights

Summary
• Pragmatic approaches to research can shape modalities and time of dialogue of results
• Applied research might be more open to experimentation of multiple approaches at different times. It is possible however that conflict arises and also that specialists from different disciplines just do their own thing
• Research context and researchers' background might shape whether, when and how results are juxtaposed
• In flexible design projects decisions on project management, including juxtaposition of results can be made in the course or at the end of the project.
• There is little consensus amongst academic researchers on whether research projects should be designed as pluralist from the onset or whether such decisions should be done during or at the end of the project.

Table 6-4 Summary of findings

6.1.5 Data collection

One pragmatic aspect Alan described was the use of data. He is relatively open about what data to use - including using pre-existing data. PT can base itself on sayings and connect them with doings. As Alan explained:

"…*I don't think the data and how (they are) collected determines how you interpret it. So I don't think it matters. The process of analysis and interpretation is the thing that is guided by the theory, rather than the question*".

Since theory drives processes of analysis and interpretation, these need to be kept separate. The methods of CCT and PT are compatible however, because both can use interviews, observation and historical data (Halkier and Jensen 2011, Joy and Li 2012, Bueger 2014). Data could potentially be collected at the same time and possibly shared, using the access negotiated in a resource efficient manner (Robson 2011). A possible risk is antagonism in multidisciplinary teams in Alan's experience. As he narrated:

"…*there would be big arguments about what the data might be. For example, have you ever written a survey with anybody? Individuals tend to have assumptions about what they want to know or about what they ought to be knowing…. from a disciplinary or explanatory point of view (…) then people sit around the table shouting at each other about which questions should go in and what shouldn't*".

Therefore, as long as the analysis is carried out separately, on which Alan and Giana agreed, data can be collected in the same setting (cf. Ibid.) if necessary, for example a semi-structured interview guide may have a section dedicated to questions exploring practices and a section with questions exploring identities. This could be necessary because of difficulties in negotiating access and the emerging character of the research (Ibid.).

Giana was possibly less relaxed about using diverse and existing data because she would like to implement a phenomenological approach where her focus would be on the participants' experience, the way they experience their actions and decisions rather than the "doings" themselves. Helen even suggests working without the guidance of a theoretical framework, for example using grounded theory, when working in diverse groups of researchers. Table 6-5 summarizes the insights.

Summary
• Two practitioners interviewed were relaxed about use of data, including pre-existing data. Various sources, e.g. ESRC can supply raw data • Analysis and interpretation of any such data from CCT and PT, need be conducted separately and independently. However data can be collected at the same time and even shared by CCT and PT (be used by two different researchers or used by the same researcher from the different perspectives sequentially) • Researchers may differ in their openness to share data

Table 6-5 Summary of insights

6.2 Discussion and Conclusions

The focus of this chapter was on how to develop a dialogue between CCT and PT to provide insights on PSS consumption. The previous chapters argued that Consumer Culture Theory (CCT) and Practice Theory (PT) are both useful but are incommensurable, from a philosophical perspective. This section brings that discussion together and seeks to outline and justify the dialogue between CCT and PT, having taken the view that PSS diffusion is a practical problem, so it is worthwhile to try to transcend the implicit research programmes of CCT and PT. It is important here to return to Giana's claim, seen in section 6.1.2, of CCT seen as an "umbrella" term, encompassing a variety of perspectives including PT. Indeed, some CCT work is inspired by sources such as Bourdieu and uses the word "practice", although from a tacit knowledge rather than a theoretical standpoint, without a statement by the researchers that they are using PT nor

an explanation of PT's framework (cf. Bardhi and Eckhardt 2012). CCT and PT should be compared on the same level, so it is important to be very specific on what versions and aspects of CCT and PT are being employed in the research. This was explained in Chapter 2.

The discussion with Alan confirms that because of the characteristics of practices (Reckwitz 2002, Schatzki 2010), practices are very different phenomena from individual consumers. For example, the collective nature of practices (Barnes 2001a) means that PT researchers tend to be interested in the scale of practices in their studies. PT therefore recognizes the capacity for deliberate action in individuals; however, the deliberations of individual consumers do not necessarily result in sustainable behaviour (Shove 2010, Watson 2012). For this reason, PT researchers focus on practices rather that individual action. The enduring nature of practices is an additional challenge to the paired use of CCT and PT. Practices are only classified as such when they are established and human subjects perform them recursively (Shove et al. 2012). CCT's experiential dimensions of consumption, mediated by market place ideologies through marketers' communications in turn focuses on reports of individual experiences through their daily lives (Arnould and Thompson 2007, Joy and Li 2012). Thus when interviewing individuals in a CCT informed study it is possible that what they describe is not a practice but at most a proto-practice (cf. Shove et al. 2012) or even an activity only performed by that individual consumer.

Looking at smoking as a practice (PT) for example requires a long-term view, where a collective, large scale, stable cessation of smoking habits is observed over several years because of radical changes in collective meanings. Investigating smoking from an individual behavioural view informed by CCT offers an individual, short-term view of a consumer's cessation of smoking, which might even be temporary.

Therefore, based on the literature summarized in Chapter 2 and on the expert interviews analysed in this chapter, CCT and PT should be treated as incommensurable and the analysis of data kept separate and crucially, plurality of approaches needs to be maintained. As Chapter 2 explained, CCT and PT were both relevant (cf. Midgley 2011) to this research by the objectives of looking at two different aspects of PSS consumption, respectively associated with consumer choice and social conventions and socio-material aspects.

Following good research practice and particularly Shove (2011), the data were analysed separately. This is option 3 identified earlier in section 6.1.

Chapter 3, section 3.5.3.1 explained changes to the methods used following reflection to better distinguish the CCT from the PT outputs. The learning process of the PhD and its emerging design raised the issue of the possible insights which could be available by comparing the two sets of results in some way. In order to do this it was necessary to understand pluralism better, to research specific literature and obtain expert opinion. In order to make sense of the two sets of results a dialogical strategy has been adopted following Hammersley (2008), where data can be juxtaposed without combining perspectives and methods to enrich insights. The objectives that justify this dialogue, following Rossman and Wilson (1994) are to pursue elaboration, enrichment and development of the theory of PSS consumption and initiation of new insights to achieve "richness of insight" as proposed by Fielding (2012). Given this exploration to develop a valid pluralistic use of CCT and PT, the next chapter discusses how sense may be made of the results.

7 Discussion

7.1 Introduction

This thesis analysed two cases studies of use-orientated PSS consumption. The first was REBUS, a PSS offering where consumers could access infant care products such as infant car seats and strollers. The second was e-carclub, where consumers were able to access electric vehicles for self-directed automobility. The two PSS offerings analysed in this thesis are differentiated by among other things, duration of access. The point of departure set out in chapter 2 was Tukker's (2015) negative assessment of PSS viability in consumer markets. He argued that consumers want to have control over products and this is only possible through the ownership of products. In some PSS commentators' view, in most Western countries, the established culture of consumption favours ownership of products (cf. Heiskanen and Jalas 2003, Mont 2004a) and this is a challenge for use and result orientated PSS. Chapter 2 reported Boehm and Thomas's (2013) claim that PSS research is rooted in the fields of Information Systems, Business Management and Strategy and Engineering & Design. Perspectives from consumer studies have not been drawn upon sufficiently in PSS literature (Ibid.). Consequently, PSS are poorly understood outside specialist circles, which has implications for the study of PSS consumption (Cook et al. 2006, Rexfelt and Hiort af Ornäs 2009), such as requiring researchers to find ways to describe PSS to participants to research (Rexfelt and Hiort af Ornäs 2009). Access based consumption, defined in Chapter 2, represents a demand side understanding of PSS. Consumers as well as business managers understand concepts of renting, leasing and subscription to products or services better than the concept of PSS offerings.

In response to this debate around what is behind the poor uptake of PSS, the research underpinning this thesis generated and analysed qualitative data in parallel from two perspectives, a cultural anthropological perspective, *Consumer Culture Theory* (CCT), which support analysis of individual behaviour, followed by a social-structural perspective, *Practice Theory* (PT). Chapter 2 explained that CCT and PT are incommensurable and Chapter 6 outlined strategic options to make sense of these two sets of findings whilst respecting their diversity (cf.

Stirling 2011). This chapter discusses how a dialogue between CCT and PT can be conducted. The REBUS and e-carclub case studies, presented respectively in Chapter 4 and 5 are compared and a review is conducted of the insights generated in PSS consumption.

7.2 Dialogue between CCT and PT

As outlined in Chapter 2, the theoretical framework of this thesis was informed by debates about the utility of predominant perspectives to study sustainable consumption which focus on individual attitudes, behaviour and customer choice. Shove (2010) argued that social-structural research perspectives such as PT are more suitable than behavioural approaches to study sustainable consumption. Whitmarsh et al. (2011) disagree and comment that an exclusive focus on social-structural perspectives risks overlooking important aspects of consumer choice. A further issue of contention was about whether the two approaches could be (or not) integrated in researching sustainable consumption (Shove 2011). This debate extended and developed further: some contributors support Whitmarsh's et al. (2011) view of combining the two approaches in some way (Wilson and Chatterton 2011, Boldero and Binder 2013, Hitchings et al. 2015, Strengers et al. 2015, Nash et al. 2017). Others support Shove's (2011) position and propose that the two fields could learn from each other but maintain their diversity (Shwom and Lorenzen 2012, Spotswood et al. 2017). A further position is to use the debate as a starting point and introduce a third way (Evans et al. 2017).

This thesis has put Whitmarsh's et al. (2011) suggestion to consider consumer choice into action whilst sharing Shove's (2011) concern about incommensurability and has explored the juxtaposition between two sets of findings generated in pluralistic fashion from CCT and PT analyses. The thesis reports results of CCT based analysis, which offers a view of consumer choice based on value expected and opportunities for identity construction from PSS consumption and a PT based analysis, which sees consumer behaviour as practices shaped by social conventions (Warde 2005) and by physical aspects of the socio-technical landscape (Watson 2012). The thesis has reported the findings of CCT informed analysis first, because of the sequence of the debate discussed in Chapter 2:

1) individual perspectives had been dominant in the sustainability debate (Shove 2010)

2) social-structural approaches were proposed for PSS (Shove 2010, Mylan 2015) and

3) counter-critique to the practice turn: individual deliberation matters (Whitmarsh et al. 2011) and so do creativity and communications (Kozinets and Handelman 2004, Arnould and Thompson 2005).

There is, especially in Whitmarsh's et al. (2011) apparent position, a contradiction between two research stances supporting possible policy interventions, behaviour change strategies and legislation and investment in infrastructure. However, these positions also contribute to a long-standing debate around whether structure, the patterning of social relations or social phenomena involving reproduction of situated practices and referring to rules and resources (Giddens 1984) or agency, the power of agents to intervene in the world (Ibid.) have primacy in giving order to social life. Section 7.9 in this chapter discusses this issue.

As Chapter 6 explained, the discussion does not *combine* the results of analyses based on CCT and PT, however the findings were generated in pluralistic fashion and juxtaposed to generate insights on PSS consumption informed by both perspectives. Individualistic behavioural approaches, which similarly to CCT offer a view on individual behaviour, assume that people are mostly rational (Shwom and Lorenzen 2012) and offer a possible explanation of why some innovations fail and why PSS consumption may not occur: consumers justify their decisions not to consume PSS offerings with rational reasons. In contrast with these established behavioural approaches, CCT offers more detail, of psychological and socio-cultural nature. For example, consumers may offer reasons for their behaviour that appear rational but are rationalized explanations of emotional decisions (Shwom and Lorenzen 2012, Eckhardt 2017). Furthermore, as Chapter 2 explained, consumers make consumption decisions based on the identity their consumption projects to others (Belk 1988) by drawing symbolic value from consumption (Richins 1994b). Consumers may be interested in PSS consumption because of rational and emotional decisions and interests in the functional and symbolic value that they can extract from it. Participants in the e-carclub and REBUS studies responded to the PSS proposition in different ways depending on their identities and lifestyles. For

example, some e-carclub members were single and did not own a car. They usually travelled by bicycle and had been involved with environmental initiatives. These participants were thus more likely than others to consume PSS. The implication of this view is that marketing and educational communications by suppliers and Government could respond to these justifications and successfully encourage consumers to consume PSS offerings such as e-carclub by emphasizing their benefits over the shortcomings.

PT explains the failure to consume PSS differently. Shwom and Lorenzen (2012, 386) in their review of models of social insights refer to the "locked-in consumer", whose options are limited by geographic and historically specific socio-technical systems. The various practices that consumers perform are strongly bundled in systems of practices (Shove et al. 2012). Of course practices do change and evolve (Crosbie and Guy 2008), which shapes consumption and uptake of innovations. Nevertheless, links between practices cause considerable inertia (Watson 2012, Mylan 2015). Meanings and competences, the elements of practices consumers perform with materials they own are tightly linked and this makes traditional consumption based on using owned products obdurate. Consumers therefore have limited freedom to alter their performances by using materials accessed through PSS offerings. Furthermore, this thesis has shown the importance of "sub-practices" in PSS consumption, for example accessing materials for use through booking with mobile phone apps. This requires mastering of these sub-practices, including planning the practices themselves, such as driving. Human subjects may or may not be amenable to learn and perform these sub-practices, as they involve additional work. In the two case studies participants said that they did find some of the meanings attributed to PSS by communications relevant. However, they had to learn access practices and some found this a challenge, for example, they could not remember passwords and booked EVs too late so they were not available. Furthermore, they needed to travel to sites where they performed other practices such as professional activities and e-carclub could not deliver this mobility with enough time and cost efficiency. The implication of this view is that structural and infrastructural changes would be necessary for PSS consumption to work. For example, a more capillary distribution and investment in infrastructure such as charging stations to enable point-to-point car clubs to be set up to make EVs easier to reach and return. Juxtaposition of findings from diverse perspectives

might reveal that the two types of policy interventions outlined above in this section could co-exist.

Following Hammersley (2008), the rest of this chapter uses a dialogical approach to juxtapose the findings and understandings provided by CCT and PT. This juxtaposition compared and contrasted the findings of the two analyses recursively for the two approaches to inform each other following Jacobs and Frickel (2009). The next section revisits claims from PSS literature and compares the findings presented in this thesis.

7.3 Point of departure for the thesis and types of PSS

As seen in section 7.1, Tukker (2015) claims that PSS is not a viable offering in consumer markets, because consumers want freedom to be able to control products and this comes from ownership. Rights and responsibilities arising from ownership of products include freedom to use and dispose of them as and when consumers wish and ability to exclude others from using their property (Snare 1972). Tukker's (2015) claim is supported by other PSS research, as seen in Table 7-1, which juxtaposes the findings of the thesis with these claims from PSS literature,

Literature claims	Findings of the thesis
Consumers want control of products (Tukker 2015) and prefer using their own. Product ownership is the preferred mode of consumption (Mont 2004b, a, Briceno and Stagl 2006, Halme et al. 2006, Tukker and Tischner 2006, Vercalsteren and Geerken 2006, Williams 2006, Scholl 2008). Ownership gives consumers right to use and dispose of products as and when they wish (Tukker 2015). This challenges PSS uptake and therefore PSS might not be a viable proposition.	Tukker's (2015) suggested importance of control of products seems reductionist. Participants were unhappy about lack of freedom in adapting products to their needs, which is problematic because parents may want to bond with products, which is facilitated by personalization (Mugge et al. 2009). That is only possible when products are owned (Snare 1972). CCT views these practices as important to consumers to construct their own identity.
Consumers express concern over on demand access to products (Schrader 1999) and reliability and responsiveness of the PSS (Catulli 2012, Le Vine et al. 2014a), or the ability to use products when they need them	With e-carclub, participants were concerned with 1) need to plan EV use by booking it in advance 2) risk that EVs would not be available at the right time, for the time required and 3) risk that EVs would not be sufficiently charged when accessing them, resulting in the inability to deliver service.

Table 7-1 Beyond control over products

Two different case studies were presented in this thesis, which helps discussing Tukker's (2015) claim. The PSS offerings presented are both use orientated and thus examples of consumption without ownership. However, REBUS involved access and possession of products for agreed intervals of six months or longer whereas e-carclub involved access for short periods (a few hours) when needed. Therefore, although REBUS and e-carclub were both use orientated PSS', they granted users very different levels of control over the artefact and this challenges the literature claims cited in table 7-1. Table 7-2 juxtaposes the two case studies,

REBUS	e-carclub
Use orientated PSS where users accessed products for an extended period. Participants paid fee in advance and retained possession of the product for a minimum period of six months. Tukker (2015) claimed that inability to grant control is the main challenge to PSS but in this service interval consumers had some control over products (Snare 1972)	Use orientated PSS where users accessed and paid for products "as they travelled", a "pay as you go" (Manzini and Vezzoli 2003) system. From a PT perspective, with this type of PSS consumers needed more engagement with access practices, to ensure the EVs were available when needed. The PSS might also have been associated with uncertainty connected with poor on-demand availability and reliability. Users had no control of products. There were issues with reliability of bookings, on demand access and fitness of EVs for use, such as state of charge
Access is the process to secure use of products in a use orientated PSS. Access was not seen as a big challenge but participants had concerns about returning products, including artefacts and packaging stewardship	Users performed access, seen as a routine practice, recursively. Access required competences, planning and specific supporting materials, e.g. mobile phone and apps.
Information communication technology (ICT) was relevant for first booking and return only	ICT was very relevant because of the recursive nature of access (booking) practices
CCT views PSS offering as related to participants' transitional life events that have unique liminal meanings (Thomsen and Sørensen 2006, Banister et al. 2009, Karanika and Hogg 2012) and are an exceptional circumstance in participants' lives. These aspects and the possession interval meant that consumers could develop attachment to products (strollers)	Data reported ordinary, routine meanings connected with personal mobility, a practice that is more "mundane" than parental practices in the life of human subjects. Users did not develop attachment for the products, perhaps because of short term access
Participants were concerned about penalties for damage (cf. Catulli 2012, Gullstrand Edbring et al. 2016).	Similarly to REBUS, concern for penalties was present, for damages and also for late return of the EV, failure to charge it and product stewardship (e.g. cleaning)

Table 7-2 Comparison between the case studies

Firstly, the REBUS PSS offering challenges all claims that PSS does not grant on demand access to products and has low responsiveness and reliability. Once users took delivery of the products, they retained possession of them for at least 6 months and therefore they could use these products when they wished. For this PSS therefore, lack of reliability and on demand access were not an issue. Of course, the possibility of challenges with responsiveness could arise with REBUS, for example:

a) If products failed and needed servicing or replacement, as the supplier could be unresponsive when required to perform this service

b) If the supplier was slow in responding to a request by users to collect the product at the end of the service interval.

The e-carclub case is different from REBUS in this respect because users booked access to a vehicle for a particular journey and a number of difficulties could arise, for example, the EV might be booked already for the time required; previous users may return it late or its batteries may not be charged. This case therefore confirms that reliability, on demand access and responsiveness may be an issue as claimed by the literature cited in Table 7-1. Here we see that the nature and configuration of the PSS offering is very important to understand PSS consumption and Chapter 5 showed that even finer configuration details such as whether a car club is point-to-point or round trip makes a difference to consumers' interest in PSS consumption.

Moving on to Tukker's (2015) claim of control over products, this might hold true for the e-carclub case study. Of course, in this case, users have no freedom to use EVs as and when they want. The ability to exclude others can arise for example from being faster than others in booking access to EVs. Users reported inability to book EVs when they wished to use them and also of finding the vehicles uncharged, dirty or returned late (and therefore not available for use even when booked). Here Tukker's (2015) claim of the importance of control over products suggests that consumption without ownership may be problematic. However, the REBUS offering, also a use orientated PSS, questions the generalized claim consumer desires to control products challenges PSS consumption. Once consumers are in possession of products, even for a limited time, they do not state any concerns about freedom to use them.

One aspect of tangible product consumption, which might support Tukker's (2014) claim, is their desired personalization and customization, defined in Chapter 2, as these require a degree of control over products. Ownership is necessary to have a right to modify products (Snare 1972). In the case of e-carclub however, findings showed that users were not interested in personalizing EVs, although some participants who were averse to become members reported personalizing their own vehicles. In the REBUS case, findings suggest that consumers were somewhat concerned about personalization. Consumers wished they could personalize car seats with stickers and yet the car seats PSS was very successful. On the other hand, participants developed a close relationship with strollers, resulting in

a) An interest in performing some level of personalization, so they preferred to use their own and thus the PSS offering of strollers was not successful.

b) A concern about damaging the stroller when using it on rough terrain, with associated penalties for these damages.

Both these concerns reveal a preference for ownership of this type of products, as participants in these cases said that they wanted the freedom to use products even in a way that could possibly damage them. This however varies with products consumed. For example, participants said they needed this freedom in using products with strollers but not with car seats.

The results of the case studies' CCT and PT based analyses indeed showed how the type of products forming the PSS offerings shape consumption. Chapter 4 reported that the two product types in REBUS – strollers and car seats – considerably differed in their rate of consumption. Car seats and strollers can both be considered "intimate" products as they are in close proximity to infants. This type of intimate products seems to present challenges for inclusion in a PSS offering because of fear of contamination and lack of trust in other users (Armstrong et al. 2015, Petersen and Riisberg 2017). However, participants consumed car seats PSS and in far greater numbers than strollers. A reason for this could be that car seats and strollers have different degrees of emotional appeal, which a number of researchers have suggested is challenging for use orientated PSS (Schrader, 1999; Mont and Emtairah, 2008; Gullstrand Edbring et al. 2016). In the REBUS case study therefore, the type of product seemed to determine whether participants consumed the PSS offering or not. However, whilst the findings appear to confirm the challenge represented by products that have emotional appeal, the consumption of the car seat PSS seems to contradict the claim that consumers are concerned about using a PSS offering based on intimate products.

In summary, a PSS offering which grants users possession of a product for a considerable interval – months rather than hours - gives consumers some control over the product accessed through the PSS. Although Tukker's (2015) claim can be useful for analytical purposes, there are important differences in the way control over products may concern consumers depending on different types of PSS and consumptionscapes. In this respect, Tukker's (2015) claim appears reductionist.

This section compared the thesis' findings with claims in literature that consumers might not accept PSS offerings because they do not deliver control over products and have poor reliability in securing on demand access. It was argued in 7.1 that consumers and providers do not understand the concept of PSS. Access based consumption is a term which represents the demand view of PSS and can be better understood by consumers and providers. The next section discusses a PT view of access and its significance for users' practices.

7.4 The role of the practice of accessing products for use

In PSS literature, there is scant evidence of research in processes of access to products, as Chapter 2 explained. Some exceptions include Le Vine et al. (2014a) who defined access as the opportunity to use a car provided by a car club, and Pialot et al. (2017). The latter's' work researched ICT as a platform to access PSS offerings (see Table 7.3), focusing on access to additional services such as upgrading and servicing to products such as vacuum cleaners and expresso machines leased to consumers. Access was defined and described in Chapters 2 and 5 as the practice to secure products (materials) for temporary use. Traditional consumption involves a number of practices. Consumers buy, store, maintain and eventually dispose of products, by selling them on or discarding them. Other activities linked to consumption of products involve product modification and repurposing (Grubbauer 2015). PT does not emphasize acquisition (buying the product) (Mylan 2015). Instead, it focuses on the mundane practices consumers perform using materials which they have acquired some time "in the past" (Warde 2017). This thesis explores how PSS consumption differs from traditional consumption in particular in respect to access to materials. A view of PSS consumption through PT reveals that access to products for temporary use differentiates it from traditional consumption.

Table 7-3 juxtaposes the findings of research with literature claims.

Literature claims	Findings of the thesis
Challenges associated with PSS by researchers include time required for booking and accessibility in the right place and at the right time (Behrendt et al. 2003; Littig, 2000; Meijkamp, 1998; Schrader, 1999; Cook, 2008; Le Vine et al., 2014; Gullstrand Edbring et al., 2016), reliability and responsiveness (Schrader, 1999; Meijkamp, 2000; Catulli 2012; Rexfelt and Hiort af Ornäs, 2009).	Consumers distrust access' reliability and on use on demand. Access requires efforts by consumers, both to perform access and facilitate access to products by others by performing product stewardship and other activities. Consumers differ in their amenability and ability to perform these efforts
PSS consumption involves engagement with information communication technology (ICT) by consumers and interaction between users and providers through ICT platforms such as web sites (Pialot et al. 2017)	Accessing products for use requires performing recurring practices with ICT materials such as laptops and mobile phones to secure access to materials through apps. In the case of e-carclub, this use of apps through mobile phones or laptops is a mundane activity, as it needs to be performed every time a user drives an EV. The different abilities of consumers to perform access might be linked to familiarity with apps

Table 7-3 role of access to products

Tables 7-3 & 7-4 summarize specific challenges consumers face in accessing products through a PSS. In the case of REBUS, consumers accessed for use and gained temporary possession of strollers and car seats for an extended time. In the case of e-carclub, consumers need to access the e-carclub every time they perform EV automobility.

Materials (mobile phone and apps to book access for use), competences (ICT skills and planning of use) and meanings (e.g. money savings, environmental protection) are the constituting elements of the practice of access. As explained earlier, some PSS literature claims that purchasing products for ownership is the preferred mode of consumption (Mont 2004b, a, Briceno and Stagl 2006, Halme et al. 2006, Tukker and Tischner 2006, Vercalsteren and Geerken 2006, Williams 2006, Scholl 2008). From a PT perspective, purchasing of products can also be conceptualized as a practice, which involves competences in researching which product to buy and negotiation, hardware and software used to research and make purchases and meanings associated with the practice,

such as economic benefits (Makkonen et al. 2010). Table 7-4 juxtaposes PT views of purchasing of and access to products.

Purchase (acquisition) of products	Access to products
Purchasing is recurring, collective and socio-material and is constituted of materials (e.g. laptops and software to browse products), competences (e.g. knowledge in selecting products and in using technology such as apps and other equipment to research, acquire and pay for products) and meanings (e.g. money saving). Purchasing of a durable product used recursively in practices is performed once and it is a practice distinct from disposal	Access needs to be performed recurrently and requires mastering of materials, including mobile phone or laptop and apps and competences to use these. With e-carclub, access requires journey planning and ability to use apps, use of mobile phones or other devices as well as ability and amenability to travel to the space where EV is parked. As well as being recursively performed, access is a practice integrated with the return of products to the provider
Where a consumer has purchased a product sometime in the past and owns it, the consumer can use the product as and when they wish (Tukker 2015).	Access as a practice includes return of product for use by other users, which participants found challenging as it involved keeping the product's packaging in good conditions to return the product.
Acquisition (purchasing) is performed only once for a specific product, when securing possession and use of the material. It can be followed by other practices such as maintenance and product modifications (Grubbauer 2015) and eventually disposal. This means that it is possible to "lose sight" of acquisition (purchasing) since it is in the past and not in the mundane practices of consumers	Users perform access every time they need to secure use of materials and follow it up with product return supported by product stewardship. In some consumptionscapes, such as in the case of e-carclub, users might perform access each time they use EVs and it becomes one of consumers' mundane practices.
In product orientated PSS service components make it easier for consumers to use products, i.e. they augment functional value (Mont 2002, Manzini and Vezzoli 2003, Mont 2004b).	At least for these two use-orientated PSS access requires efforts by consumers, which they may or may not be amenable to make. The efforts to secure use of products including planning make of PSS a potentially unattractive proposition.

Table 7-4 Purchasing of products Vs access to products

As Mylan (2015) explains PT "shades off" acquisition from the study of mundane consumption. Acquisition (purchasing) is an activity performed to secure materials necessary to perform the focal practice. The PT based study of PSS in contrast included a focus on access sub-practices.

In PSS, differently from traditional consumption, consumers need to perform the practice of access in concomitance with their mundane practices, so that access practices become part of PSS consumption. In some types of PSS, "pay as you go" use orientated such as e-carclub, consumers may perform access every time they drive an EV. Access therefore becomes part of the mundane routine of automobility: users need to book the vehicle, unplug it from the charging station, drive it and return it and reconnect it to the charging station.

In the case of REBUS, participants performed access only when ordering car seats through a web site and having it delivered, as the parents kept possession of the product for a service interval. However, the return of products to the provider differs from traditional consumption of car seats, where users sell on or discard them. In both cases, appropriation differs from traditional consumption as consumers are contractually bound to perform good product stewardship and keep the product in a fit state for use by others when they return the product to suppliers. In comparison with the e-carclub PSS, in REBUS access did not become an ongoing successively performed mundane practice. Parents booked the delivery of products once and arranged delivery to their home. Users then at the end of the agreed use interval mutually agreed with the provider a time for collection from their house and returned the products together with their packaging. In this case, therefore consumers did not perform routine access practices to a product with every use as they retained possession of it and performed access and return practices only at the beginning and at the end of the use interval. Participants conducted most of this interaction through their computer or mobile phone, which were part of the materials used in the practice, although unlike with e-carclub, a proprietary app was not available. An important aspect of access is the level of competence consumers need to acquire to perform it. As seen in table 7-4, findings show that consumers had different levels of confidence and amenability to perform access.

In summary, access to PSS offerings is a specific process of PSS consumption and it is part of what characterises and distinguishes it from other forms of consumption. Access can be a key shaping aspect of PSS consumption, as the findings revealed that the difficulty of access is problematic.

The findings of the CCT based analysis showed that consumers might not trust PSS offerings. Some participants said that they were concerned about failing to access EVs for use, for example because they had forgotten passwords to sign

in the service system. In addition, they said that in general they did not trust the PSS provision, including providers and other users. They said that when accessing products, they were concerned that they would find them damaged or not available at the right time and that the provider could overcharge them.

As seen in Chapter 2, CCT conceptualizes branding an offering as a strategy which can reassure consumers (Brexendorf et al. 2015) and build trust in the provider. In this way, this thesis identified co-branding as an effective strategy to build consumers' trust in the PSS offering. The findings revealed that the combination of a not-for-profit and a commercial brand (co-branding) was especially effective in creating trust. Co-branding can also be associated with trusted actors or a "social or environmental cause" (Till and Nowak 2000, 473). In the case of REBUS co-branding meant parental care and environmental protection and, for the e-carclub, the cause of environmental protection. In the case of REBUS, co-branding the PSS offering fostered a brand community linked to shared meanings on a National basis. In the case of e-carclub, the co-brand was associated with meanings shared within a local community. The role of the "not-for-profit" brand in the co-branding strategy was important in both cases. Brands are also important, because they help consumers identify with products and services and to construct their identities. Section 7.5 reports findings through CCT to develop the role of consumer identities in shaping PSS consumption.

7.5 Consumer identification with PSS offerings

Whilst PSS literature does not explore consumer identities as defined by CCT, it investigates the attitudes of different consumer segments towards PSS offerings. Table 7-5 juxtaposes findings of PSS literature with findings on PSS and consumer identities in the thesis.

Literature claims	Findings of the thesis
Researchers described market segments including demographics such as age and income (Firnkorn and Müller 2012) and life style characteristics such as open-mindedness, ownership and consumption orientation (Meijkamp 2000), values orientation (Schrader 1999, Piscicelli et al. 2015), environmental consciousness and political involvement (Bardhi and Eckhardt 2012), nomadic consumers (Bardhi et al. 2012) to name a few.	Different consumer identities may be more compatible with PSS consumption. Examination of consumer identities through CCT suggested that not all consumers were amenable or able to perform access practices in the same way to use a PSS automobility offering. For example, younger consumers had more facility to learn competences required, as they were more accustomed to use mobile phone apps.
Younger consumers seem more amenable to take up PSS offerings, for example car clubs (Le Vine et al. 2009, Firnkorn and Müller 2012, Le Vine et al. 2014a, Gullstrand Edbring et al. 2016)	Younger consumers seem more amenable to PSS. They have skills of using apps and attribute them meanings such as control over products and even fashion value. Other types of consumers could be more receptive to PSS offerings. Participants that could be considered nomadic consumers (cf. Bardhi et al. 2012) seemed less inclined to own products and more open to PSS offerings with both EVs and infant products.
Consumers who are more "environmental altruist" (Meijkamp 1998, 2000) or hold values such as benevolence (Piscicelli et al. 2015) are more likely to take up automobility PSS and other use orientated PSS offerings. Even when they take up PSS offerings, however, consumers express materialistic values (Briceno and Stagl 2006). Evidence of a relationship between political consumerism orientated towards environmental protection and car club use (Bardhi and Eckhardt 2012)	Participants who had taken up PSS offerings seemed to adhere to ideologies that made them more receptive to meanings of environmental protection, which encouraged them to try the PSS offering to avoid to have to buy expensive infant products.

Table 7-5 PSS, consumer typologies and identities

The findings of CCT based data analysis indicate that individual identities of consumers shape their consumption of PSS in favourable or unfavourable ways. Some participants saw the PSS offerings as useful to construct the identities they wanted to project. In REBUS, some participants liked to construct identities of pragmatic parents and caring for the environment and the future of their

children were important meanings (cf. Moisander and Pesonen 2002) associated with the offering.

Both case studies highlighted that some participants identified with PSS offerings and narratives emerging from their utterances reported lifestyles which resembled types of consumers theorized by CCT literature, such as voluntary simplifiers (Shama 1985, Craig-Lees and Hill 2002) and nomadic consumers (Bardhi et al. 2012). Both lifestyles are associated with frugal consumption with little concern for possessions and therefore such consumers could be a target for PSS offerings. Participants who identified with the PSS offerings were younger, "trendier" and single in the case of e-carclub. In the case of REBUS, on the other hand, they were couples who had become parents late in life and be likely to have only one child and in some cases, they were people who relocated often due to their profession. Most identified with meanings of environmental protection. Thus, consumer identities could indicate the most appropriate target consumers for PSS offerings.

Tukker (2015) made a general prediction that PSS offerings cannot succeed in consumer markets because consumers want control over products. This thesis provides specific insights which question that claim. Table 7.5 suggests that individual participants had very different levels of concern with control over products depending on their identity, lifestyle and even type of product. For example, parents who jogged wanted control over strollers and therefore preferred owning them but were happy to access car seats through the PSS offering. Even more importantly, consumer identity plays a role in the value sought from PSS offerings. Value is important because consumers use products to create value for themselves (Sheth et al. 1991, Babin and James 2010). The next section therefore deals with the value that PSS consumption can deliver.

7.6 Value delivered by PSS in use

Value created by PSS offerings is an important strand of PSS research. Early research on PSS focused on functional value (cf. Giarini and Stahel 1993, Goedkoop et al. 1999, White et al. 1999, Sundin et al. 2005, Kimita et al. 2009b, Pawar et al. 2009, Sundin et al. 2009, Bertoni et al. 2011a, Geum and Park 2011, Niinimäki and Hassi 2011). Functional value is consumers' evaluation of consumption based on the practical benefits that it achieves (Babin and James

2010). The argument of early PSS researchers such as Giarini and Stahel (1993) and Goedkoop et al. (1999) is that if functional value were sufficient to consumers, PSS consumption without ownership would be feasible. Table 7-6 juxtaposes these literature claims with findings from the thesis.

Literature claims	Findings of the thesis
Giarini and Stahel 1993, Goedkoop et al. 1999 and White et al. 1999) focus on functional value as the main interest of customers that could be delivered by PSS. PSS also need to deliver symbolic and hedonic value, e.g. (Briceno and Stagl 2006, Scholl 2008). Practical aspects of achieving PSS functional value can shape customers' response such as financial and space savings, parking problems, maintenance costs and other aspects (Meijkamp 1998, Schrader 1999, Meijkamp 2000, Mont 2004a, Gottberg and Cook 2008)	Findings of case studies through the CCT lens revealed that symbolic and hedonic value were indeed important for PSS consumption. Both in REBUS and e-carclub functional value was shown to be essential: participants consumed the PSS offering to achieve practical outcomes and failure to achieve functional value (for example not being able to move from A to B when needed) would prompt consumers to reject the offering.
Rational consideration of functional value also included temporary and one-off use (Behrendt et al. 2003, Bardhi and Eckhardt 2012, Armstrong et al. 2015), where consumers assessed functional value against costs incurred	Cost effectiveness and affordability were important meanings associated with costs in rapport to duration and frequency of use.
Symbolic value is an important outcome consumers may extract from PSS consumption (Scholl 2008) Consumers can identify with access offerings (Belk 2014b).	Symbolic value is an important outcome of PSS consumption. Consumers associate meanings to products and brands. These meanings had a role in how users saw themselves (Weiss and Johar 2013). In contrast with Bardhi and Eckhardt (2012) and Weiss and Johar (2013) some consumers identify with the PSS offering and the accessed product.
Use orientated PSS such as car clubs offer considerable hedonic value because they enable users to drive luxury high performance cars (Bardhi and Eckhardt 2012, Le Vine et al. 2014a)	Hedonic value is an important outcome of PSS consumption. In e-carclub participants narrated how driving the EVs was pleasurable because of the EVs driving smoothness. In REBUS, participants relished strollers because they considered them showcases for their new-borns.

Table 7-6 Value

For a CCT understanding of value it is important to look into individual consumer thinking. Individual consumers are motivated to consume PSS offerings by the value they can achieve. PSS literature has tended to deal with a supply side conception of value as delivered to customers, such as practical benefits and to suppliers, such as shareholder value (cf. Aurich et al. 2010, Bertoni et al. 2011b, Pezzotta et al. 2012, Bertoni et al. 2013), rather than the value consumers draw from PSS in use. As seen in Chapter 2, symbolic value is the opportunity that possession or use of an object gives one for self-expression or identity construction (e.g. representation of values in which one believes or of which one believes he/she is endowed); the association of an object (or a service) with one's personal history (Richins 1994b). Hedonic value is the pleasure and satisfaction gained from the use of a product or service (Ibid). Table 7-6 shows that findings of this research suggest that PSS consumption can deliver symbolic and hedonic value as well as functional value. Some participants however preferred to draw symbolic and hedonic value from using strollers or vehicles they had acquired ownership of, rather than doing so with products provided through the PSS. In the REBUS case, participants drew hedonic value by jogging with their strollers and they preferred using a stroller they had acquired ownership of rather than a leased one to avoid having to pay fines because of damage incurred to leased strollers during use. In the e-carclub case hedonic value was somewhat affected by having to perform access to products which some participants did not like.

CCT literature claims that brands have a role in delivering symbolic value (cf. Schouten and McAlexander 1995, Tan and Ming 2003, Schulz 2006). Symbolic and hedonic value construct consumers' individual identities and different identities require different types of symbolic value. The symbolic value of the PSS, which embodied meanings such as environmental protection and altruism, was delivered predominantly by car seat offerings. These meanings may appeal to different consumers than those who seek symbolic value from consuming their own products. Table 7-7 juxtaposes insights on PSS consumption in literature with the findings of the thesis.

Literature claims	Findings of the thesis
PSS offerings are not able to deliver symbolic value, notably for products that are important for defining oneself or that create emotional value (Schrader, 1999; Bardhi & Eckhardt, 2012; Tukker and Tischner 2006; Scholl 2008). However, Belk (2014b) and Santamaria et al. (2016) claim that accessed products can deliver symbolic value.	Participants to REBUS seem to identify with and extract symbolic as well as hedonic value from the PSS offering around car seats. The findings of the case study suggest that a stronger source of symbolic value of PSS may derive from co-branding (cf. Askegaard and Bengtsson 2005), the combination of a commercial provider brand with a not-for-profit brand (Grossman 1997). Consumer identities have a role in shaping symbolic value, as consumers attribute meanings to brands of PSS depending on the identity they want to construct and project to the outside world.

Table 7-7 Symbolic value and identity construction

As can be seen from Table 7-7, co-branding the PSS offering with a commercial and a not–for-profit brand contributed significantly to the creation of symbolic value (cf. Till and Nowak 2000). Some participants even extracted symbolic value which embodied meanings such as resistance to marketers' hegemony (cf. Kozinets and Handelman 2004). For example, these participants liked to see themselves as resisting pressures they felt subjected to by marketing and educational communications to buy a wide range of products. The not-for-profit brand, as it was similar to product sharing within a community of peers, supported this feeling of resistance. Here the not-for-profit brand seemed to legitimize the symbolic value and the not-for-profit partner played the role of "honest broker". Thus, the PSS offering assisted by enabling buyers to save money by avoiding purchasing an expensive item of short-term use and lease it instead but also to commit an act of rebellion against marketers' hegemony (cf. Ibid). In some cases, however the PSS offering failed to address the parents' needs for symbolic value and this could be a problem for PSS consumption. For example, a few participants volunteered that they associated owning a specific brand of stroller with status and their attachment to that product with parental competence. In the case of e-carclub, similarly, the PSS helped satisfy the needs

of several participants for symbolic value, which chimed with identities constructed on political ideologies, interrelated sets of values and beliefs about the structure of society that constitutes a group's shared perspective (Goode et al. 2017) that represents consumer activists' goals, identities and adversaries (Kozinets and Handelman 2004). However, the PSS failed to deliver some of the *functional* value participants wanted. As Chapter 5 explained, e-carclub was not configured for commuting, however some participants seemed to see this as a limitation. Consumers who espoused materialistic meanings such as status, independence and security identified with products they owned. Consumers who identified with other meanings such as environmental protection, altruism, trendiness and cost effectiveness identified with the PSS co-brand.

Temporary and occasional use of the product was also a reason for consumers to consume PSS offerings, such as group 0 car seats (from 0 to 9 months). Consumers similar to the users of REBUS and e-carclub could be possible targets for PSS offerings. Shih and Chou (2011), Littig (2000) and Catulli et al. (2013) suggested that PSS lease duration concerns consumers because the products accessed may become obsolete and lose fashion value and this has implications for the symbolic value PSS offerings can deliver as products are put to multiple uses.

In summary, functional value is essential for PSS consumption for it to work but in itself is not enough to result in substantial PSS consumption. Symbolic and hedonic value are also important because specific user identities can match with PSS offerings. The meanings shared by a co-brand community, assisted by the combination of a commercial and a not-for-profit brand can help consumers identify with these communities and with the co-brand, delivering symbolic value.

The literature on PSS consumption also explored the role of consumers in *co-creating* value with suppliers. In order to co-create value consumers need to perform various tasks linked to access. PSS literature has focused on some negative aspects of PSS which can be considered value co-destruction. Details of value co-creation and PSS were researched with the application of sociology of consumption perspectives, (cf. Vaughan et al. 2007). The next section explores value co-creation in REBUS and e-carclub.

7.7 Role of consumers in value co-creation and co-destruction through PSS

PSS literature, focused on use orientated PSS in particular, provides insights in the issues of trust in suppliers and other users associated with multiple uses of products and the consequence that the offering might deliver poor value to users. As Table 7-8 and section 7.4 show, participants are concerned about state of repair and serviceability of products following use by others. Existing research also investigated the role of consumers in co-creating value with suppliers (cf. Morelli 2009, Briceno and Stagl 2006; Vaughan, Cook, and Travick, 2007; Pialot et al.; 2017; Cook 2014; Bardhi & Eckhardt 2012).

In CCT, consumers co-create symbolic value as they identify with the PSS offering. Users attribute to PSS offerings meanings that enable them to co-construct their identity. As they see themselves as altruistic and environmentally sound, the meanings of environmental protection attributed to the PSS by the provider's marketing communications help consumers construct their identity. Providers can therefore co-create symbolic value with consumers through brands.

Armstrong et al. (2015), Catulli and Reed (2017) and Petersen and Riisberg (2017) focused on negative aspects concerned with products being pre-used, as this is frequently the case with PSS (Mont et al. 2006, Gottberg et al. 2009, Sundin et al. 2009). This can be considered a source of value co-destruction (Kashif and Zarkada 2015, Prior and Marcos-Cuevas 2016), "an interactional process between service systems that results in a decline in at least one of the systems' well-being (which, given the nature of a service system, can be individual or organizational)" (Ple' and Chumpitaz Càceres 2010, 431). Table 7-8 juxtaposes PSS literature claims on value co-creation with the findings reported in the thesis.

Literature claims	Findings of the thesis
PSS uptake is affected by product's condition, e.g. cleanliness, state of repair, fear of contagion, quality of remanufacturing (Meijkamp 2000, 1998; Bardhi and Eckhardt 2012; Rexfelt and Hiort af Ornäs 2009; Armstrong et al., 2015; Pialot et al., 2017; Bardhi & Eckhardt 2012; Petersen and Riisberg, 2017; Cook 2008; Catulli, 2012; Catulli and Reed 2017) and service quality resulting from consumer action or inaction, for example not returning a product in time (Bardhi and Eckhardt 2012, Catulli 2012).	PSS users can co-create or co-destruct value. Users of infant products in REBUS co-created value by product use and stewardship. In e-carclub, the timely return of EVs was essential for next users to be able to draw value from the PSS. Consumers could potentially co-destruct value by returning the product late or damaging it. This could delay delivery to next user. Drivers of e-carclub EVs were also likely to co-destruct value through opportunistic and careless use.
PSS value is co-created by providers with consumers (Morelli 2009, Briceno and Stagl 2006; Vaughan et al., 2007; Pialot et al.; 2017; Cook 2014; Bardhi & Eckhardt 2012). However users resist co-creating value and big brother governance is necessary to encourage them (Bardhi and Eckhardt 2012).	Participants seemed to distrust other users and they expected them to destroy value – for example by failing to clean the product or to charge EVs. This resulted in distrust of the PSS offering.

Table 7-8 Value Co-creation

As Table 7-8 shows, value co-creation and co-destruction, defined respectively in 2.3 and 7.7, are significant consequences of PSS consumption. Evidence of value co-destruction consumers may cause through PSS consumption is the damage to bicycles provided by bicycle sharing companies (Hern and Topham 2018, Pidd 2018a, b) discussed in Chapter 1. Bardhi and Eckhardt (2012) described Zipcar's reliance on users to co-create value by product stewardship and returning cars on time. Participants in their study resisted performing these activities, with risk to co-destroy value as other users would find vehicles in a state not fit for driving. So important was the role of users in thus co-creating value that Zipcar had to design "directive" communications to encourage drivers to perform these functions, on penalty of fines.

Value co-destruction can result either from the action (or lack thereof) of provider or consumers. Some literature suggests that consumers are careful to avoid co-destroying value, as they want to avoid penalties for damage (Catulli, 2012; Gullstrand Edbring et al. 2016).

CCT and PT can offer useful views of value co-creation and co-destruction, in particular, how consumers, through the practice of access can co-create value or co-destroy it, such as causing the service to fail for users. Users need to perform access practices to materials effectively if they want to create value for themselves, e.g. the product is available when needed because customers have booked it in a timely manner. When returning products after use the role of users is important to co-create value through product stewardship, EV re-charging and bringing products back timely. Most users of the car seat and strollers PSS offering stated that they exercised good stewardship of product and packaging, in compliance with the providers' directions. Since car seats were on lease, participants commented that they were anxious about damaging them.

In the case of e-carclub, participants stated they were concerned to find that previous drivers had misused the EVs and had often failed to recharge them. Users also wanted to avoid penalties for damage and late return of EVs. For example, users co-destroyed value by failing to perform sub-practices such as access and product stewardship and they or other users were unable to use a product because of damage to it (which in itself is value co-destruction). Further value was destroyed by failing to perform the activity that they meant to perform with the PSS offering, such as driving to a venue. Consumers therefore may associate PSS consumption with risk of value co-destruction, particularly when consuming a PSS that requires recurring access, such as e-carclub.

The thesis has outlined processes of value co-creation and co-destruction involving consumers and providers through PSS consumption and the nature of value expected by consumers. Access itself is a practice and a process involved in PSS value co-creation and *possibly* co-destruction.

In summary, literature on PSS and consumers (cf. Meijkamp 2000, Le Vine et al. 2014b, Gullstrand Edbring et al. 2016) suggests that some consumer segments might be more amenable to PSS offerings than others. Results of the two case studies reported here suggest that some consumer identities might be more compatible with PSS consumption than others in specific life stages. For example, consumers who identify with meanings of environmental protection might be more amenable to PSS than materialistic consumers.

PSS consumption can be conceptualized as an integration of practices which, importantly, involve the performance of access practices. The thesis described

access as a routine practice which supports different types of PSS in different ways. A use orientated PSS may involve recurring performance of access, however a use orientated PSS resulting in temporary possession requires one off access and release of the product. Result orientated PSS might as well require access. Belk (2014b) theorizes types of access such as music sharing which can be classified as result orientated PSS. This is an effort that consumers may or may not be amenable to make. The results have also shown that consumers vary in their competences and amenability to perform access, for example, when it requires ICT skills. Both case studies highlight failure to consume PSS offerings, including where consumers that were amenable to try these offerings did not successively consume them. The next section explores failure to consume PSS.

7.8 Resistance to PSS consumption

In PT, Shove et al. (2012) maintain that human subjects (consumers) have little freedom to consume sustainably and in this case to consume PSS, if this goes against social conventions, the "rules of the game" (cf. Shove 2010, 1258). The REBUS case showed how PSS consumption of car seats was hindered by social conventions, such as the one against using pre-used car seats. The effect of social conventions in constraining consumers' deliberation to consume PSS however, needs further discussion.

The "rules of the game" can be considered in the light of Giddens's (1984) theory of structuration, a theory that shaped PT. Structuration is "the process by which social structures (whatever their source) are produced and reproduced in social life" (DeSanctis and Poole 1994,128). According to Giddens (1984), human subjects have the ability to perform – or not – a practice, "the individual could, at any phase in a given sequence of conduct, have acted differently" (Ibid. 9). Agents, who can be individuals or groups, have a degree of autonomy and "transformative capacity" (Ibid. 15). The "seed of change is there in every act which contributes towards the reproduction of any 'ordered' form of social life" (Giddens, 1993, 108).

Marketers and consumers in Giddens' conception can be considered agents. An important element of Giddens's (1984) framework is the process of *interaction*, involving *communication, power* and *sanction*. The results of the case studies reported in this thesis seem to suggest, that agents such as the NCT and the

NHS have a power to *legitimate* (cf. Ibid.) the practice of using pre-used products through marketing and educational communications. These communications have the ability to shape the rules through "signification" (cf. Ibid.), i.e. associating new meanings with a given practice such as PSS consumption of car seats. Although existing structures limit agents' options (Giddens 1984, Shove 2010), as Jones and Karsten (2008,130) comment, "over time new structures, no less influential, may develop" and this ability to transform structures is attributed to corporate agents and individuals (Ibid.). Thus, marketers and consumers would have the capacity of shaping practices by introducing new meanings and competences through marketing and educational communication.

The findings of the CCT based analysis indicate that communications created by providers and expert organizations associated the PSS offerings with positive meanings through specific artefacts, for example a certificate of quality assurance. At the same time a proportion of consumers – as agents – associated positive meanings with the PSS offerings. CCT literature shows how consumers can gain membership of social groups, for example brand communities. Schouten and McAlexander (1995) had observed how members of Harley Owners Groups (HOGs) established new practices, customizing Harley Davidson motorcycles. The findings of the thesis show that community is important, whether it aggregates around the NCT as in REBUS or the Wolverton community as in e-carclub. Seen from a structuration perspective, these groups of people would establish their own sets of rules, a process which was observed from a PT perspective by Pantzar and Shove (2010).

The community may react to communications from providers (Schulz 2006) but may also have their own peer-to-peer communications and therefore set up their own sets of practices independently from providers. These processes of structuration may help proto-practices supported by PSS create links between PSS offerings and meanings and competences. Socio-materiality would be the next step and it might be more difficult to establish links between the proto-practice and other practices consumers perform.

CCT supports exploration and description of interactional and communication processes that produce *legitimation* (cf. Giddens 1984,29). The analysis through CCT showed how consumers who identified themselves as "trendy" and altruistic with attention to environmental protection meanings consumed PSS. At the

same time, analysis of results through PT showed that these same consumers had the ability to learn access competences which enable PSS consumption. These consumers had better abilities to learn practices to access products, including booking them through mobile phone apps and in the case of e-carclub, also re-charging vehicles and planning their trips in detail. These competences, in Giddens's (1984) structuration vocabulary were incorporated in these agents' "stock of knowledge" (Ibid, 29). From this point of view, if considering the debate on agency and structure (Ibid.), the results suggest, as in the theory of structuration that neither agency nor structure have primacy. Structure rules agents but agents can alter structure in creative ways.

In contrast, some versions of PT have evolved into over-structural accounts which leave little attention to individual agency (Swidler 2001). For example, Pantzar and Shove (2010), based on a robust case study of Nordic walking, comment that corporate agents (marketers) have little power or ability to shape practices.

In REBUS, most participants' PSS consumption was selective, for example, as described in 7-3 they consumed car seats but not strollers provided through a PSS. In this respect, the PSS offering of strollers can be considered a failure from a business point of view. A very small minority of participants consumed strollers provided through the PSS, which questions the viability of that PSS offering. Recursive PSS consumption could be observed in a small number of cases because a small number of parents interviewed performed access to different products recursively, as they booked products in succession, such as a car seat followed by a stroller. However, the thesis data do not show whether the proto-practice could become collective, because of the very small number of participants who accessed multiple products.

The e-carclub case on the other hand offers another insight on PSS consumption. In most cases, members of e-carclub, having consumed the PSS offering once did not consume PSS again, thus, the practice was not performed recursively. Some participants tried e-carclub membership and made several journeys but then allowed their membership to lapse. Therefore, these consumers went against social conventions, for example the freedom and independence associated with car ownership (cf. Choo and Mokhtarian 2004) and consumed PSS. Why however was this proto-practice not recursively

performed and therefore did not move from proto-practice to being an embedded social practice?

In structuration theory and some strands of PT, rules and resources constituting social structure are only in the minds of agents (Jones and Karsten 2008). However, whilst structuration conceives of structure being only social conventions and rules, recent formulations of PT informed by innovation studies (cf. Shove et al. 2012, Watson 2012) conceive the social-structural elements to include *physical* structural aspects including geographic distribution of places of living, shopping and working as well as infrastructure. Thus, there are social and physical structural factors that prevent new initiatives or proto-practices (Shove et al. 2012) to become established as practices, as they may not be able to compete with existing practices.

Mylan (2015) claims that incumbent consumption practices may be obdurate because the elements of these are tightly linked to each other and these practices are linked with other practices, which stabilizes them. PSS consumption proto-practices may thus fail to compete with the incumbent practices and attract sufficient new practitioners to become collective. The obduracy of incumbent practices is the result not only of social conventions (Warde 2005) but also of the "physical" elements of the socio-technical landscape such as the geographic distribution of places to travel to as well as infrastructure (cf. Watson 2012). Therefore PSS fails to fit in the "everyday life and usage patterns of consumers" (practices) as proposed by Heiskanen et al. (2005, 58).

PT offers a plausible description of what shapes PSS consumption and how obdurate incumbent practices' might inhibit PSS consumption. The consumers described in 7.6 wanted to consume sustainably but lacked the freedom to consume PSS despite their identities and lifestyles that could align with PSS consumption. The elements of the proto-practices analysed in the thesis failed to form links between elements within them and with other practices. This is why they were not established and faded away, such as in the case of e-carclub, where users lapsed due to lack of fit of e-carclub with commuting practices and meanings of independence (cf. Shove et al. 2012). Therefore, more than just by social conventions, as mentioned in 7.2 consumers were prevented from consuming PSS recursively by the "physical" elements of the socio-technical landscape, which did not allow them to extract value from PSS. These proto-

practices therefore could not stabilize because they failed to become recursive, collective and socio-material (cf. Schatzki 1996, 2010, Reckwitz 2002).

Following Mylan (2015), the focal practices in the 2 case studies, infant mobility and automobility, lacked freedom to diversify, multiply and co-evolve with elements and other practices (Crosbie and Guy 2008) to include PSS offerings. In Giddens's (1984) conception of structuration this alignment and evolution is the result of human subjects changing their performance of practices by using different materials, being motivated by different meanings and implementing different competences (Feldman and Orlikowski 2011, Shove et al. 2012). Therefore, whilst consumers and providers, seen as agents, would have some freedom to introduce new elements such as meanings and competences, the freedom of practices to align is severely constrained by "hard" structural factors, as agents cannot alter geography or infrastructure. This suggests that the addition of structural elements such as physical landscape and infrastructure gives primacy to structure over agency. In brief, some elements of Giddens (1984) structuration theory operating as a dialogical structure between the CCT and PT frameworks could enhance their analytical usefulness.

7.9 Summary

This chapter has discussed the findings of this thesis mapped against the PSS literature and argued that the notion that control and ownership of products are the only factors relevant to PSS and its uptake by consumers is reductive. The two cases in the thesis revealed that participants' consideration of PSS offerings contravened socio-technical landscape and therefore failed to be recursively performed and recruit other practitioners (Shove et al. 2012). Therefore, the practice did not replicate and grow in scale (Warde 2017) and was not established. The next chapter draws conclusions, limitations, recommendations and further directions for research.

8 Conclusions, contributions and directions for research

8.1 Introduction

This thesis has explored use orientated PSS consumption, a potentially sustainable mode of consumption of tangible products, in two different consumptionscapes: infant care products and electric vehicles. Despite the differences between consumptionscapes, type of products and duration of access, following a replication logic (cf. Yin 1994) juxtaposing the case studies in Chapter 7 reveals that some insights are transferable between the two case studies.

This chapter returns to the thesis' aim and objectives and compares them with the findings of the study; it then draws the conclusions of the thesis and identifies the contributions made by the research. After reviewing the limitations of the study, the chapter then provides recommendations for strategy and future research. The next section revisits aim and objectives set up for this PhD research in comparison with the findings.

8.2 Reviewing research aim and objectives

The research aim was

> *To explore and describe the social and cultural dynamics that shape Product Service Systems consumption*

Five research objectives addressed this aim and this section represents these objectives with a commentary on their results.

i. *To identify approaches to study the social and cultural aspects of Product Service System consumption*

The literature review presented in Chapter 2 suggested the use of a *cross-disciplinary* approach, where Consumer Culture Theory (CCT), used to explore consumer choices and Practice Theory (PT), which is focused on social-structural aspects of consumption, could contribute to addressing the research problem (cf. Wall and Shankar 2008, Jacobs and Frickel 2009). The research collected data in the context of two case studies (a child care PSS

and the e-car club) using CCT and PT informed methods. CCT and PT based analyses of the data were performed separately so that two different sets of results were produced. The literature on pluralism and interdisciplinarity and the expert interviews and workshop suggest that a dialogical strategy is the most suited to generate insights of the two sets of results by comparing and contrasting them. The findings from the discussion of results were reported in Chapter 7 and the conclusions offered in this chapter, however, suggest that there is opportunity for a more *trans-disciplinary* approach, where disciplinary experts and social practitioners produce knowledge jointly (Wall and Shankar 2008, Jacobs and Frickel 2009). Following Midgley et al. (2016), a virtual paradigm can be used to create links between CCT and PT. In particular, this approach can be used to investigate how consumption initiated by individual creativity and improvisation (cf. Askegaard and Linnet 2011) can evolve into recursive, collective and socio-material practices through processes of structuration (Giddens 1984) of meanings and competences.

ii.   *To describe how meanings and ideologies linked with use orientated PSS offerings shape consumers' identity construction*

The results of CCT based analysis highlighted the participants' sensitivity to environmental meanings and ideologies and indicated that such links may encourage PSS consumption. Ideologies were in some cases connected with the participants' political interests and life styles and included anti-consumerism and a critical view of marketers. In both case studies, participants associated PSS consumption with meanings such as environmental protection and altruism. In the case of e-carclub, the connection was easier to make because the vehicles are electric, something that has a well promoted environmental image. Many participants associated the use of the PSS with a desired identity for themselves, for example, they viewed themselves as "caring", "hip" and "modern". Participants constructed identities as pragmatic, altruistic and environmentally conscious individuals by consuming PSS.

iii.   *To identify the value outcomes from PSS consumption expected by consumers who identify with PSS offerings.*

The findings showed that the consumers in this research were interested in the PSS because they expected to extract three types of value: functional, symbolic and hedonic. Functional value was an essential outcome that consumers sought and a PSS' inability to deliver this was a "deal breaker". For example, in the case of e-carclub, the inability of the e-carclub to allow them to travel at short notice or in an emergency meant that PSS offerings would not be an option. Consumers seemed to rationalize PSS consumption using a number of such functional justifications. In addition to satisfaction of their core need for travel or for transporting infants, consumers sought "utilitarian" value for money. They were motivated by further rational considerations, such as parking spaces availability and storage space for EVs and infant care products respectively. Consumers however, also needed to extract symbolic and hedonic value from consumption and PSS consumption did not always deliver on this. Key examples were that consumers identified themselves with PSS offerings of car seats but not strollers. The e-carclub also struggled to deliver the symbolic value owned cars provide. Furthermore, since the PSS did not enable personalization, which is part of the pleasure of using strollers, the PSS offering did not always deliver on Hedonic value.

iv. *To describe the relationship between consumer identities and the value outcomes consumers seek to co-create from PSS consumption*

The results of the CCT based analysis showed that consumers vary in their ability and amenability to co-create value for themselves through PSS consumption. As Chapter 7 explained, use orientated PSS involves access to products and a sequence of activities to secure the use of the product to co-create value. Different consumers have different amenability and ability to make these extra efforts to co-create value. For example, in the case of the e-car club, some were more skilled than others in using mobile phone apps to book access to the vehicle and they were more amenable or able to travel to where they picked up the vehicle they booked. Ideologies may motivate consumers to make sacrifices in their consumption. The way people contributed to value co-creation by exercising stewardship of products such as car seats and strollers and packaging and how e-carclub users spent time cleaning cars before returning them evidenced this. Consumer identities are therefore a mediating aspect to convert a possible acceptance of PSS in

principle into consuming PSS based on the value sought from PSS consumption. Mediation is a process where intervening aspects such as consumer identities and context elements influence the outcome of a process (Bate et al. 2012), such as PSS consumption. For example, consumers who see themselves as altruistic and environmentally conscious may be more amenable to co-create value and to make adjustments or sacrifices.

v. *To describe the social conventions, the socio-technical landscape, meanings and competences that shape PSS consumption*

The findings showed that a variety of social-structural aspects hold potential to shape PSS consumption with positive or negative outcomes from the point of view of consumers performing it. Social conventions which deter from using pre-used products in the infant products consumptionscape can hinder PSS consumption. Communications from key institutions working in an advisory capacity such as the NHS, NCT and expert groups associated with commercial organizations may reinforce these social conventions. Other elements of the socio-technical landscape are fashion value and status, which are social conventions that encourage ownership of established brands of products.

For the REBUS case study, the research also showed that the various practices performed by parents have the potential to discourage PSS consumption of strollers. Such practices tend to encourage the consumption of owned specially adapted products to perform activities such as jogging and trekking. In the e-carclub consumptionscape, the research showed that the various practices performed by e-carclub's existing and lapsed members discourage PSS consumption of EVs. This is a result of the locations that consumers need to travel to, for example to work and perform leisure and sports activities. These locations might be physically distributed in a way that make use of owned vehicles more practical.

Having identified the key findings with respect to the research objectives, the next section articulates the conclusions of the thesis.

8.3 Conclusions of the thesis

Consumer Culture Theory and Practice Theory are both cultural perspectives. CCT supplies more anthropological and PT more sociological insights, although

they have some overlaps. This section draws conclusions from the CCT view, then from a PT view and finally it seeks to draw insights from the two through a dialogue between the two.

8.3.1 CCT view of PSS consumption

CCT helps reveal deliberated decisions of individuals and small groups of consumers. In REBUS, A majority of the participants would consume PSS offerings of one product type (car seats) but not another (strollers). The different performance of the two products suggests that products with high symbolic value are more challenging as PSS offerings. The meanings encouraging the participants to consume car seats using the PSS did not extend to strollers, which are a more symbolic product.

The participants' evaluation of PSS seemed in part informed by rational deliberations. Consumers often framed their justifications for consuming or not a PSS in functional terms such as cost and storage space savings. The PSS was apparently associated with cost-efficiency, based on ratio of costs to amount of use. Indeed, some participants justified their preference even of access to strollers through a PSS because they were having children late and planned to have only one child. A deeper analysis however suggested that participants rationalized what were often-emotional decisions, so their desire to own products was often explained by emotional attachment to strollers. Furthermore, interest in cost-effectiveness was associated with identity construction: nomadic consumers (cf. Bardhi et al. 2012), students and younger people, for example, saw themselves as frugal consumers and were less inclined to spend money on bulky, costly products.

Meanings associated with consuming PSS were linked to the lease of products rather than the product itself, included altruism and environmental protection. CCT however also revealed more complex meanings such as ideologies, which in some cases were political. Ideologies encompassed the participants' interest in environmental goals and rejection of environmental damage and were essential to their identity construction (cf. Kozinets and Handelman 2004). These political ideologies may shape some consumers' uptake of PSS. In both the infant care and automobility consumptionscapes small numbers of participants had been involved in environmental activism. In other cases, PSS consumption was linked to anti-consumerist ideologies. PSS consumption in

these cases was motivated by resentment against marketers (cf. Kozinets and Handelman 2004) resulting in refusal to purchase expensive products and access them for the needed period instead. In these cases, the findings are contrary to the PSS literature, which assumes that PSS just offers functional value and therefore cannot be used to provide products with high symbolic value. These findings suggest that for some parents, the use value of PSS turns into symbolic value. However, there were other links to consumer identity. Some consumers have different identities and in these cases, a number of participants acquired ownership of products and consumed them in order to express status and interest in fashion value, which results in ownership being necessary for consumers to extract symbolic value. Overall, the research indicates that differences in consumer identity can swing individuals between favouring and dismissing a PSS offering.

Furthermore, in order to draw symbolic value and identify with some especially symbolic products, such as strollers in the REBUS case, consumers may want to customize or personalize these products to project personal meanings important to them. This creates emotional attachment to those products (Mugge et al. 2009), which become an extension of their personality (Belk 1988). In the customers' journey, if on encountering PSS offerings consumers are open to the concept of PSS, their evaluation of the symbolic value delivered by those products determines whether PSS consumption occurs or not. PSS consumption therefore is to some extent shaped by product type and consumptionscape. Products which have high symbolic value might be more challenging to PSS because of this need for personalization. This is a challenge to the very PSS concept, as ownership of products is necessary to have rights to modify them. An important gap in knowledge therefore is a detailed understanding of why a (small) number of participants consumed PSS with both *car seats* and *strollers* – why did these consumers contravene social conventions unlike the majority who only consumed the *car seat* PSS? This calls for a better understanding of how consumers co-construct symbolic value through accessing products. Another question is whether other types of PSS configurations could satisfy consumers' desire for personalization, for example by allowing for seamless swapping of products as consumers' needs change.

Co-brands have an important role in embodying meanings and ideologies associated with PSS offerings and therefore contributing to constructing

identities as well as contributing to create trust in the providers and other users. Co-brands are the result of communications by providers and other organizations. In the REBUS case, the association between the NCT and the Maxi-Cosi brands provided the offering with community meanings, which piqued the interest of parents and ultimately, generated trust. In the e-carclub case, the local Wolverton community brand generated greater attraction and trust. The two co-brands observed in the two cases were:

1) A National rather than localized community meanings co-brand which was connected with a key stage of people's life, transition into parenting and

2) A community's meanings co-brand which was connected with a *localized* community.

Chapter 7 discussed how CCT helps describe how consumers gain membership of interest groups such as brand communities and the co-brands identified, such as Maxi Cosi and the NCT and e-carclub and Wolverton were the focus of aggregation of consumers around meanings and ideologies relevant to them.

In summary, the CCT based analysis highlighted that small numbers of consumers, motivated by meanings and their ideologies, consumed PSS but that this consumption did not continue or had little success with other consumers. This reveals a further gap in knowledge: how do meanings and ideologies which motivate individuals or small groups to consume PSS result in collective practices which support PSS consumption? Why do consumers who seem to share meanings and ideologies that encourage PSS not consume PSS beyond a few initial attempts?

8.3.2 PT View of PSS consumption

A CCT view of PSS consumption described how some individual consumers or small groups may extract symbolic value from PSS consumption and consume PSS offerings. The results of the analysis however showed that people who had consumed PSS, for example by becoming members of e-carclub, later allowed their membership to lapse. Why did this happen? A PT based analysis suggests that an "in-principle" acceptance of PSS offerings and PSS consumption may be shaped favourably or adversely by the socio-technical landscape, which may prevent recurring performance and recruitment of new practitioners (cf. Shove et al. 2012). Such evidence includes landscapes that strongly favoured the use

of owned strollers and, for the e-carclub PSS where the geographical location of living, working and shopping places shapes automobility to favour traditional car ownership. Chapters 4 and 5 offered examples of how the diverse practices consumers perform are linked which had an important role in shaping PSS consumption. Consumers are networked in complexes of practices so that, for example, sport and recreational practices other than the focal practice shaped mobility and parental practices. An important research question is whether and how such networks of consumers' practices can evolve to integrate PSS consumption.

As Chapter 2 explained, access based consumption is defined as "transactions that can be market mediated but where no transfer of ownership takes place" (Bardhi and Eckhardt 2012, 1) and access as the "experience" of temporarily accessing products or services (Rifkin 2000, 44). Following Shahen and Cohen (2007) however, access has also been defined *as a practice* in Chapter 5, access practices are *performances of activities required to gain the use of materials temporarily as needed* and this is the definition of the practice of access proposed in this Chapter*.* Practices can be considered processes as well as structures (Reckwitz 2002, Schatzki 2003). The findings therefore suggest that the process of accessing products for use is a necessary sub-practice of PSS consumption and researchers and strategists need to study and understand it as a practice. Access is a task consumers need to perform over and above conventional consumption to consume PSS offerings. For example, in contrast with automobility practices using private cars, where consumers could enter and drive their car at will, with automobility PSS users need to book access to the vehicle and plan their journey to return it in time. Access therefore is a challenge for consumers. It requires consumers to make extra efforts and learn new abilities to consume PSS offerings, performing activities such as booking access to products through ICT devices, product stewardship and cleaning before timely returning them ready for use (e.g. batteries charged in the case of e-carclub). Therefore, additional consumer engagement over and above what needed in conventional consumption is necessary for PSS consumption to occur.

Access is a variation of the consumers' daily practices they need to perform to consume PSS and this has implications for specific processes and technologies to grant consumers access to PSS solutions, such as ICT including hardware and

apps. An important gap in knowledge is a better understanding of what shapes the performance of access sub-practices in becoming recursive and collective.

8.3.3 Conclusions from the dialogue between CCT and PT

The two narratives suggest that PSS initiatives introduced by consumers or providers may only partly be in line with the "rules of the game" - the accepted practices and conventions of consumers. The socio-technical landscape may make traditional consumption based on ownership even more obdurate. These aspects may limit or nullify consumers' ability to consume PSS offerings. An important gap in knowledge is whether and how consumer identities, their lifestyle, motivations and desired value may be a mediating aspect that can encourage them to consume PSS by performing their practices in different ways. In some cases, however, the physical aspects of structure and infrastructure can make traditional consumption so obdurate that PSS offerings may not be able to deliver value and consumers might not be able to co-create value with them, so that PSS could not break in the landscape.

The findings of the thesis also indicate that community meanings are very important in addition to associated competences necessary to legitimize PSS practices. The communities aggregated around Wolverton and the NCT demonstrated this effect from both the CCT and PT perspectives. The meanings that may be associated with PSS consumption can shape proto-practices. A community then might support these proto-practices in achieving a collective dimension. Figure 8-1 summarize the elements that shape PSS consumption and represents elements that belong to individuals and those that belong to practices.
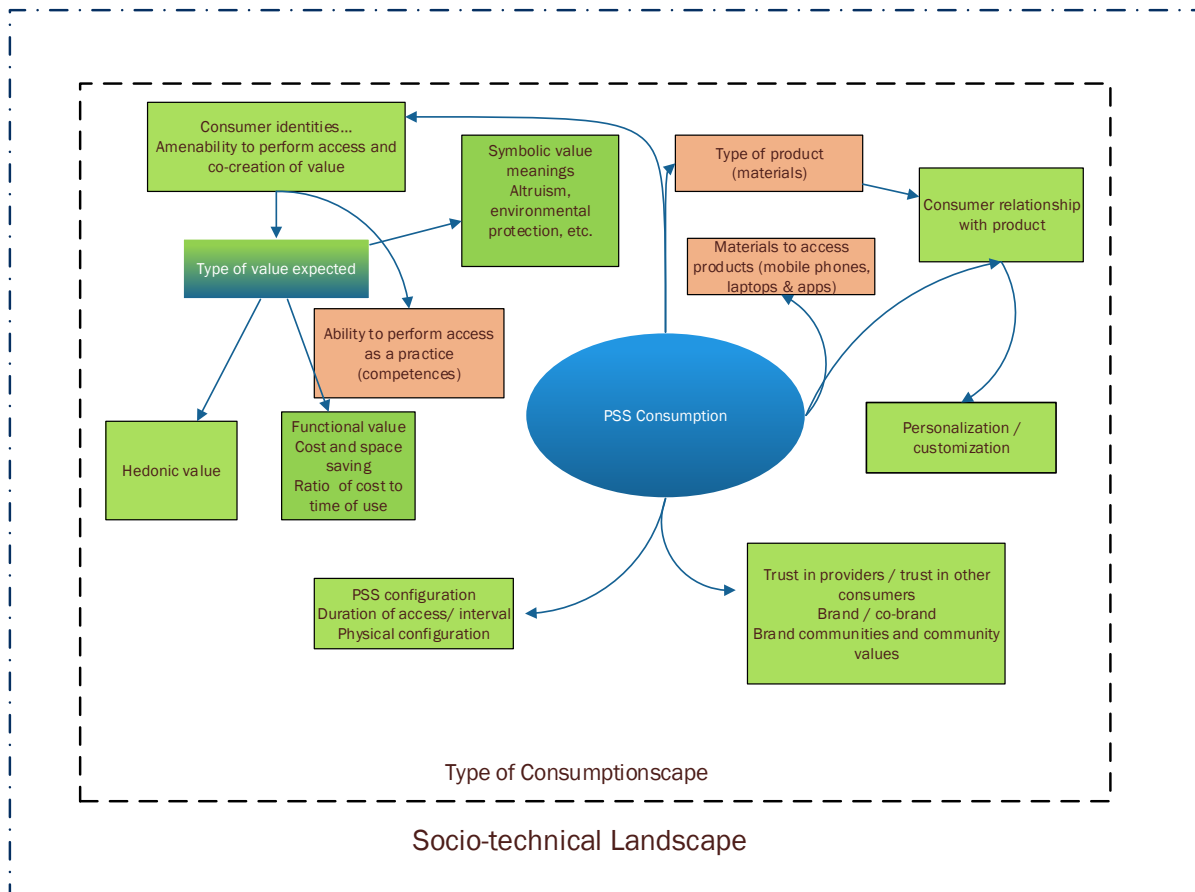
Figure 8-1 Elements of PSS consumption

The findings suggest that consumers may vary in their ability and amenability to access PSS offerings, for example, younger people familiar with mobile phone apps are more apt to perform access. A number of participants seemed to have low confidence and ability to perform access and this sub-practice therefore struggles to take hold. For the cases in this research, examples include walking to get to a vehicle or cleaning a product before returning it and allocating space in their home for packaging. In short, consumers might have the ability and amenability to mediate between an interest in principle in PSS consumption and their need for value. In their customers' journey, consumers might decide that they could accept less value or are amenable to make a greater effort in co-creating value with the PSS provider. Consumers care for community meanings and they may accept a sacrifice in order to make changes in practices to deliver value if they feel they are part of a community with shared values and objectives. An important gap in knowledge is how PSS consumption proto-practices can become established.

8.3.4 Contribution to research in PSS Consumption

In summary, this thesis makes the following contributions to PSS consumption research:

- Consumers may consider and consume PSS offerings if the meanings and ideologies associated with these offerings help the construction of consumers' desired identities and if consumers can identify with the PSS offering. PSS offerings however need to deliver functional, symbolic and hedonic value for consumers to consume them, though in some consumptionscapes consumers might be amenable to forego some of the value traditional consumption delivers or to make additional efforts or adaptations to co-create value through PSS offerings.
- PSS consumption includes performing access to products involving specific activities and materials. Through access, consumers can co-create and / or co-destroy value
- PSS consumption depends on whether practices performed through PSS offerings and associated elements and practices can co-evolve to enable consumers to perform those practices collectively and recurrently through PSS offerings integrated within the socio-material landscape. This freedom depends on the strength of the links between elements within incumbent practices and the strength of the links of these with other practices, which confirms Mylan's (2015) proposition.

The gaps in knowledge identified by the research are that a more detailed understanding is needed of:

i. How consumers co-construct symbolic value through accessing products via a PSS. For example, why in the REBUS case did a (small) number of consumers contravene the social conventions of the majority who only consumed *car seat* PSS?

ii. Whether and how consumer identities, their lifestyle, motivations and desired value may be a mediating aspect that can encourage consumers to consume PSS by performing their practices in different ways.

iii. How meanings and ideologies, which motivate individuals or small groups to consume PSS, may result in collective practices which support PSS consumption. Why do consumers who seem to share meanings and ideologies that encourage PSS not maintain their use of a PSS?

iv. Whether and how consumers' practices can evolve to integrate PSS consumption and what shapes the performance of access sub-practices in becoming recurrent and collective

v. Whether other types of PSS configurations could satisfy consumers' desire for personalization, for example by allowing for seamless swapping of products as consumers' needs change

vi. How research can draw on the CCT and PT views and generate a coherent narrative. This involves the development of alternative dialogical strategies to draw insights from CCT and PT. Section 8.6 proposes recommendations to fill these gaps.

8.4 Limitations of the study

Chapter 3 presented limitations which are specific to the research strategy and methods selected, including size and types of samples and the "snapshot" nature of the study which, because of the nature of PhD programmes is not longitudinal. These limitations need to be reconsidered in drawing the conclusions to the study. The research strategy used was case study, which makes the phenomena researched difficult to separate from the contexts of the cases (George and Bennett 2005, Marshall and Rossman 2016). As such, the transferability of the results to other cases and contexts may be limited (cf. Robson 2011). As anticipated in Chapter 3, the time constraints of the study did not allow for a longitudinal study that could have offered further insights in the stabilization of PSS consumption proto-practices and their evolution into social practices. This is problematic in particular when remembering that changes in practices occur over long periods, even generations (Warde 2017). The recommendations for research return to this limitation. A final limitation lies in the researcher's interpretation: the personal characteristics of the researcher unavoidably shape the conclusions and recommendations (Marshall and Rossman 2016). The supervisory team has of course moderated this limitation. Bearing in mind these limitations and their implications for transferability to other cases, the next section proposes recommendations for practice.

8.5 Recommendations for strategists and policy makers

In a traditional conceptualization of consumption based on consumer choice, marketing initiatives could be the key interventions to promote PSS consumption. PSS providers could design communication strategies to emphasize the benefits of PSS offerings including costs savings, resource efficiency and environmental benefits and associated practical benefits. Branding and co-branding strategies could be a possible strategic option for marketers and providers. These initiatives would be informed by research into consumer identities and motivations to anticipate consumers' decisions. The findings of the thesis have indicated, however, that this might be an ineffectual strategy. Policy makers and strategists would need to investigate consumer practices which the PSS product category serves, as well as consumers' rationalized motivations and therefore detailed research into the practices and complexes of practices (Shove et al. 2012) in which consumers are immersed is necessary. The research also suggests a need for investment in infrastructure, such as, for electric vehicles, charging stations, which is beyond the providers' reach. There are examples where this is done: Tesla Motors has undertaken initiatives to invest in charging infrastructure in collaboration with other organizations (Karamitzios 2013, Melaina et al. 2017). Of course, this is not within reach of all providers and, in some cases, an organization has no choice but lobbying Governments to invest in infrastructure. An important implication of these findings is that a study of the complexes of practices that a potential PSS should integrate in may reveal that PSS is not viable regardless of consumers' favourable attitudes which research may have revealed.

The conclusions in 8.3 inform a number of recommendations to policy makers, strategists and designers involved in PSS design, delivery and management. These are:

- Access to products and services is a key aspect of PSS consumption and as discussed in Chapter 7 it is a performative challenge for consumers. Access conceptualized as a practice is important to understand PSS consumption because it involves efforts by consumers to co-create value. PSS strategists and designers need to design access processes which are user friendly and secure. A possible strategy to achieve this is the design of proprietary ICT apps which are user friendly and operated through mobile phones and other portable devices

- PSS strategists might target consumers based on their age, interest in environmental protection and low concern for material values. Literature offers consumer classifications such as voluntary simplifiers, nomadic consumers, younger consumers and research on specific consumptionscapes of application may reveal more.

- The different performance of similar products in infant care in virtually the same consumptionscape and those in the e-carclub case confirms that the type of product matters. Products with a high symbolic and hedonic value seem to present particular difficulties as part of a PSS offering. Strategists need to research consumers' practices and identities in rapport to products considered for a PSS offering in their specific consumptionscape.

- In order to address consumers' desire for personalization, PSS offerings may have to include a wide range of products and brands to support the PSS, which may raise issues of financial feasibility for providers. Designers could perhaps design subscription offerings (cf. Armstrong et al. 2015, Petersen and Riisberg 2017, Pialot et al. 2017) where products could be seamlessly replaced when needed, which could remove the need for customization.

- The results confirm that quality assurance certification is necessary to reassure users of the quality of the PSS offering in all cases when artefacts are pre-used and refurbished or remanufactured

- Insurance integrated in the PSS offering could offset concerns with product quality and integrity associated with previous use by consumers and cover financial risk for users related to damages they may cause. Planners would need to assess this for financial viability for providers and affordability for consumers.

- Chapter 7 discussed the role of users in co-creating and co-destroying value. This as explained in that chapter could be caused by returning products late or damaged. From a strategic perspective, this means that the service delivery of the PSS depends on consumers' amenability and ability to co-create value. Value co-destruction by consumers or providers would result in service failure, which may affect service quality. Service failure, defined in Chapter 5, is a situation in which the performed service is below expectation (Maher and Sobh 2014). Service failure could be a concern for consumers and could also be a potential outcome of PSS, for

example, when artefacts that underpin the PSS fail to work or are not available when required (Catulli 2012). In order to avoid and if possibly manage these service failures the following processes could be put in place:

- o Users would need training to gain competences in accessing products and taking responsibility for service delivery. Strategists and designers dealing with PSS could devise suitable processes to ensure users contribute to value co-creation, including penalties if necessary.

- o PSS providers would need to set up efficient back office operations to ensure PSS delivery performance. Back office operations are all those activities that take place to guarantee service quality, which occur behind the line of visibility from the consumers' perspective (Zomerdijk and de Vries 2007, Manda et al. 2009). These activities would monitor and in some respect control whether value is delivered to users by the PSS offering (Luna-Reyes et al. 2011).

8.6 Recommendations for research

Chapter 7 discussed how CCT and PT describe PSS consumption and how they usefully help identify problematic aspects shaping it. The conclusions made sense of two separate CCT and PT based analyses. As Chapter 2 explained, the problem in linking the two different accounts of PSS consumption is the incommensurability of CCT and PT. In Chapter 2, Midgley's et al. (2016) claim was discussed that incommensurable perspectives could be "connected" in research by a *virtual paradigm*, a "provisional" set of assumptions researchers can set up to interpret concepts and ideas from other paradigms. Future research on PSS consumption following this thesis could adopt *processes modelled* on structuration as a virtual paradigm. *Structuration*, defined in Chapter 7 as "the process by which social structures (whatever their source) are produced and reproduced in social life" (DeSanctis and Poole 1994,128) could offer a conceptual connection between CCT and PT to research how practices become recursive and collective because of the re-integration of their elements. Research could investigate how, because of processes of structuration, proto-practices can evolve by effect of the integration of re-elaborated elements within them and become established as practices.

Scant research is available on PSS consumption. The research that does exist also tends to use individualistic consumer perspectives, which nearly always offer a snapshot view of PSS consumption (Cook 2014). Research is necessary to investigate PSS consumption as a process in time. In effect, PSS consumption was defined as a process in Chapters 1 and 2. Further insights would be provided by research that takes the form of longitudinal studies of PSS consumption. For example, this could encompass ethnographic studies and action research over a longer period than was possible in this thesis.

This thesis proposes that a better understanding of PSS consumption, seen as a process, should tap in the growing research stream of Access-Based Consumption, in particular focusing on access as a practice. Accessing EVs for example, is part of the automobility practice through a PSS offering. As practices can be part of other practices (Watson 2012,491), access practices are part of PSS consumption practices (processes). Research should therefore explore access as a process from an individualist perspective concerning the symbolic value of access and as a practice. Crucially, it should also investigate the evolution of access into a collective, recursive and socio-material process through processes of structuration. A worthwhile research line would be to explore how practices evolve, following the structuration of elements of these practices within communities. The question is whether this structuration can legitimize the use of PSS offerings to perform these practices (cf. Giddens 1984) and render them recurring, collective and socio-material. Research could draw on CCT to support detailed description of the creative processes of individuals and providers in improvising and changing practices (Askegaard and Linnet 2011) in the quest to co-create value. For example, providers of REBUS and e-carclub associated positive meanings of altruism and environmental protection with their PSS offering through marketing and educational communications as well as quality assurance certificates produced by providers. CCT and PT literature both describe how consumer communities are able to adopt and re-elaborate meanings and competences (cf. Schouten and McAlexander 1995, Pantzar and Shove 2010). The research could then investigate how creative initiatives such as individual PSS consumption can become recurring, collective and remake and transform interlinked social practices (cf. Tanggaard 2013).

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Appendix A: CCT & PT REBUS interview guide

<u>Draft Questioning Route</u>

1. What products (artefacts) do you / did you get as part of the scheme?

2. How did you go about getting (your pram/stroller / cot)?

3. Whom did you ask for advice in order to make this choice?

4. Why did you seek information and advice from that direction?

5. What other sources could you have gone to for advice?

6. What is good about it for you?

7. What is the value to you? What value (benefits) do you get from it?

8. Why did you select the option of getting this product as a lease / rent instead of buying it? (or, the opposite if the option was turned down)

9. What do you think is good about it in general?

10. If you were to think about the values you care about...what do you think are the values that influenced your choice of option between leasing / renting your pram and buying it?

11. How do you use this product?

12. Why?

13. If you were to recommend this scheme to a friend...what do you think you would say to them?

14. Compare getting a pram through such a leasing scheme, against getting a cot. What would you say are the differences?

15. What are the aspects you like the most in this scheme?

16. What aspects you would like to change?

Appendix B: e-carclub CCT Interview guide

CCT Interview Guide (Themes)

Theme 1 Meanings and ideologies of e-carclub

(Sample question: 1) "What does use / membership of e-carclub mean to you?")

Theme 2 Identity construction

(Sample question: 1) "What image of you do you think driving e-cars project?" 2) "What image of you do you think driving rented vehicles projects?" 3) "how does it feel to be a member of e-carclub?")

Theme 3 Value

(Sample question: 1) "What benefits did you expect?" 2) "What do you think is the value you can expect of e-carclub?")

Theme 4 Interaction of value with identity construction

(Sample question: 1) "what does driving a Ferrari say about its driver?" 2) "What does driving a Skoda says about its driver?" 3) "What do you think driving an e-carclub car says about you?" 4) How does it make you feel?" "What do you think it represents?"

Appendix C: e-carclub PT Interview Guides

PT Interview Guide (Themes)

Theme 1: Recruitment

(Sample questions: 1) "How did you become a member of e-carclub?" 2) "Would you recommend e-carclub membership to a friend?") 2) What made e-carclub acceptable?

Theme 2 Meanings

(Sample question: 1) "What does traveling which includes e-carclub cars mean to you?" 2) "What does driving cars rented as a member of e-carclub mean to you?" 3) "What does driving electric cars mean to you?")

Theme 3 Competences

(Sample question: what were the new aspects of driving you had to learn? 1) "What were the new practices you had to learn about e-cars?"   2) "What were the new practices you had to learn about the rental system?")

Theme 4 Materials – how do they compare with conventional materials for travelling / driving?

(Sample questions: 1) "What e-car models do you prefer driving?" 2) "Tell me about the electric cars themselves"; 3) "How do they compare with traditional cars?")

PT Interview Guide 2 (Drive About)

[Before the drive]

1. Competences

(Sample question: how did you organize the journey we are going to go on?

[After the drive]

2. Competences

(What procedures do you follow at the end of the journey?)

3. Meanings

(Sample question: What does driving an electric car mean to you?)

Appendix D: Expert interview guide

Expert interviews – Themes

1. Sociological – structural approach vs Behavioural view (CCT) (start from (Shove 2010)

2. Specific insights the use of sociological and behaviours approaches could offer if paired in some way

3. Considering the issue of incommensurability (Blaikie 1991), discuss strategies to combine different approaches
   a. Including at what point

Appendix E: Expert Workshop worksheet

Working with two theoretical perspectives from consumer studies to research Product Service System Consumption – Expert Workshop

Worksheet 1

Many thanks for your interest in this Expert Workshop. You are being asked to contribute to the completion of a doctoral program with the benefit of your expert opinion. Part of the workshop, a plenary discussion, will be recorded, and the enclosed informed consent form asks for your permission to do so. The project has been approved by the ethics committee of the Open University and the ethics number is HREC/2013/1534/Catulli/1. The qualitative data collected will be used as evidence for a doctoral thesis and possibly to draft manuscripts to be submitted to journals. No collected data will be connected to your identity and you will not be quoted by name. You are free to withdraw from the research at any stage you wish. Please leave your filled worksheet to us. If you would like a copy, we can arrange for this to be made.

You will be associated to a group and be given a theoretical framework to address the following question:

Why was the infant car seats uptake more successful than pushchairs?
This space for your notes and observations

Worksheet 2

You will be asked to join a recorded plenary discussion

1. What insights do the two perspectives of PT and CCT provide?
This space for your notes and observations

Worksheet 3

2. How can the two approaches of PT and CCT work together?
This space for your notes and observations

Worksheet 4

> **3. Can they be bridged at the point of design? Or…**
> **4. Should they be compared only at the analysis stage?**

This space for your notes and observations

Appendix F: REBUS list of participants

Participant	Age Range	Background	Expecting	First baby	Income Range	Location	Children	Product Rented	Profession
Amanda	34-40	Canadian	No	Yes	over 60K	London	1	None	Advertising Strategist
Amy	34-40	Canadian	No	No	£20K - £39K	Oxford	2	Car seat	Researcher
Angela	34-40	American	No	Yes	£20K - £39K	Brighton	1	Cot	Social Worker / Music Technician
Anna	27-33	English	Yes	Yes	60+	London	0	None	Researcher
Annette	34-40	English	No	Yes	32K-£39	Birmingham	1	Carrycot	Software Tester
Ashyia	34-40	British Pakistani	Yes	No	£20K - £39K	London	1	None	Teacher
Beverley	27-33	English	Yes	Yes	£20K - £39K	Cambridge	0	Car seat and Cot	Copywriter
Cara	27-33	English	Yes	No	£20K - £39K	Baldock	1	Car seat	Chemist
Caroline	34-40	UK West Indian	Yes	No	£<20K	Oxford	2	Carrycot and cot	Assistant Nurse
Catherine & Ross	34-40	English	Yes	Yes	£40K-£59K	Leeds	0	Car seat and stroller	IT Tech / Office worker
Chantal	27-33	English	No	No	£<20K	Telford	3	Pushchair	Chef
Charlotte	25-34	Canadian	No	Yes	£40K-£59K	Oxford	1	Car seat	Mechanical Engineer
Chiara	25-34	Italian	No	Yes	60+	London	1	Car seat	Researcher
Christine	27-33	Canadian	No	Yes	£40K-£59K	London	1	None	Teacher
Clare	34-40	British	Yes	Yes	£20K - £39K	Solihull	0	Car seat	Health and Safety expert
Cristina E	27-33	Spanish	Yes	No	£20K - £39K	Hull	2	None	Childcare trainee
Daniel & Sarah	34-40	English	Yes	Yes	£20K - £39K	London	0	Car seat	Psychologist/ Environmental Journalist
Jenny	34-40	English	Yes	Yes	32K-£39	London	0	Car seat	Actor
Kathy	27-33	English	No	No	£46K-60K	London	2	None	Researcher
Miriam	34-40	New Zealand	Yes	Yes	£20K - £39K	Canterbury	0	Car seat	Lecturer / researcher

Rachel	34-40	English	Yes	Yes	£20K - £39K	Bristol	0	None	Radiologist
Rebecca	21-26	British	No	Yes	£<20K	Chester	1	None	Homemaker
Rowan	35-44	English	No	Yes	£40K-£59K	Cambridge	1	Car seat	Nurse / Researcher
Sandra	34-40	American	No	Yes	< £20K	Plymouth	1	Car seat / stroller	Marketing Consultant
Sarah 2 & Peter	34-40	English	Yes	Yes	£40K-£59K	London	0	Cot	Hospital Administrator / Teacher
Sarah Col	>40	British	No	Yes	£<20K	Beverley (Hull)	1	None	Researcher
Sarah L	34-40	Scottish	Yes	Yes	60+	London	0	None	Sport therapist
Shazna	21-26	Asian	No	Yes	£<20K	Burnley (Preston)	1	Car seat	Teaching Assistant
Sinead	25-34	English	No	Yes	>£60K	London	1	Car seat	Accountant
Tamara & Jamie	34-40	Canadian	No	Yes	£20K - £39K	Frome (Somerset)	1	Car seat	Actor
Tess	27-33	American	No	Yes	£20K - £39K	London	1	None	Marketing Executive / Student
Verity	27-33	British	Yes	Yes	£40K-£59K	Bristol	0	Car seat	NHS Quality Assurance

Appendix G: e-carclub list of participants

Participants	Age range	Background	Gender	Location	Membership Status	Nomadic	Parent	Profession
Andrea	50-55	Italian	Male	Suburban	Active	No	Yes	Academic
Anna	23-27	Chinese	Female	Urban	Non Member	No	No	Business Analyst
Caroline	45-50	British	Female	Suburban	Non Member	No	Yes	Leisure Assistant
Donna	45-50	British	Female	Suburban	Active	No	Yes	Academic
Erin	28-35	North American	Female	Suburban	Active	No	Yes	Banking Executive
Felicity	45-50	New Zealander	Female	Urban	Non Member	No	Yes	Teacher
Guy	45-50	British	Male	Suburban	Active	No	No	HESA Statistic Analyst
Hamad	40-45	Pakistani	Male	Urban	Lapsed	yes	Yes	Academic
Jaspreet	18-23	British Indian	Female	Urban	Non Member	No	No	Marketing Assistant
Juliette	45-50	British	Female	Suburban	Non Member	No	Yes	Music teacher
Lesley	28-35	Chinese	Female	Urban	Non Member	No	Yes	Homemaker / estate agent
Marie O (2)	45-50	British	Female	Suburban	Active	No	Yes	Social Entrepreneur
Mike	50-55	British	Male	Urban	Lapsed	No	Yes	Academic
Paul (1)	50-55	British	Male	Suburban	Active	No	Yes	Academic
Paul (2)	50-55	British	Male	Suburban	Active	No	Yes	Academic
Sarah	40-45	British	Female	Suburban	Non Member	No	Yes	Scientist
Scott	40-45	British	Male	Urban	Active	No	Yes	Academic
Catriona	28-35	British	Female	Urban	Active	No	Yes	Local Authority employee