SUSTAINABILITY IN AND AROUND THE HOUSEHOLD

Karel Raats

August 2021

Master's Thesis for the Environment and Society Studies programme

Nijmegen School of Management - Radboud University

Employing an individual and practice context to better understand the uptake of sustainability in daily routines

Colophon

Second assessor:

Title:	Sustainability in and around the household. Employing an individual and practice perspective to better understand the uptake of sustainability in daily routines.
Author:	Karel Raats
Student number:	s4265653
Submission date:	25 August 2021
University:	Nijmegen University Nijmegen School of Management
Supervisor and first assessor:	dr. S.A Veenman

Rikke Arnouts





Summary

This master's thesis looks at sustainability in daily household routines with a focus on those who acknowledge the necessity of a sustainable society. The aim is to give a comprehensive account of the way the sustainability pervades or is barred from daily routines.

For this, practice theory is employed (model by Shove et al., 2012) on <u>two contextual perspectives</u>: <u>the</u> <u>routine context</u>, which looks at different kinds of household routines (e.g. food or washing routines), what elements they consist of, and the temporal and spatial context in which they are performed; and <u>the sustainable disposition</u>, which highlights the possible perspectives an individual may have on sustainability and their role herein.

Fourteen in-depth, semi-structured interviews were taken, all residents of Nijmegen. Considering the routine context, in general, societal attention for sustainability has proven instrumental in the build-up of important sustainable meanings. Important here is too the distaste respondents have for wasteful behaviour, leading to feelings of thrift. More routine specific elements are described in the thesis.

In regards to the sustainable disposition, three main perspectives have been identified, roughly defined as going from: only a little interested and focused on sustainability; to normatively interested and focused on sustainability. But, for all perspective counts – although to different extents, that while sustainability is considered important and urgent overall, there are two main barriers. One is that some core elements (meanings) of daily routines oppose the inclusion of sustainable elements. This can often be linked with certain temporal and spatial constraints, such as a routine requiring a certain duration before it can be properly enacted.

The other is that there is a lack of competences (knowledge, feedback and know-how) that prevents sustainability from being implemented in many daily routines. This has two main sources: firstly, a lack of feedback, making it hard to identify and address unsustainability in routines. Secondly, a lack of social interaction regarding daily routines, partially because they are not enacted together with-, or observed by others outside the household. Relatedly, many routines are not often conversed about, further limiting the uptake and exchange of competences.

Finally, in the adjustment of routines it is important to foster routine performances that lie outside of the familiar. This incentivizes reflection about the routine, and enables the making of sustainable routine adjustments. For example, by changing the spatial context in which a routine is enacted.

Preface

Dear reader,

With this thesis I hope to complete a long period of studying. The road was long and bumpy, and there were times I seriously thought about settling down along the way, for I did not think I could traverse another hill. While these obstacles were mostly of my own making, that does not make them less severe. Even so, there was also a lot of good to be had. Aside from gaining new friends, I developed both intellectually and emotionally; although I also learned that such development should never stop, especially considering I see many aspects to be improved still.

When I looked to transition away from my prior physical chemistry master, I knew I wanted to make a difference in relation to climate change and its consequences. Environment and Society studies was a logical direction, and I have not regretted this choice. I acquired a more social and interpretative perspective, in addition to the mostly positivistic perspective I held before, something which I'm very grateful for. Similarly, for this master's thesis, I wanted there to be a connection to climate change and the mitigation thereof. It intrigues me that we know so much about climate change and its consequences, yet manage so little in response. Naturally, this can be looked at in multiple levels: globally, nationally, municipally, individually, or indeed, as practice. Ultimately, I decided to keep to the context of the city I live in by looking at the practices and individuals that reside there. Additionally, I decided to focus on this new interpretative perspective because there was more for me to learn there. I do somewhat regret this, but mostly because it made things harder for me at a time in which I could've benefitted from the easier more familiar path (to me) that is positivism.

Finally, I would like to offer thanks to several people. Firstly, the respondents to my interviews, for enabling me to conduct and finish this master's thesis. Secondly, my supervisor Sietske Veenman: thank you for being positive and helping me focus and structure my work. I realize that I am not an easy student, especially my communication needs improving - including asking questions, my apologies for that. Thirdly, my parents, who watched me struggle with myself and the thesis the past year. They have tried their best to enable me to finish. Finally, my friends, for taking my mind of things when I was stressed out.

I hope you enjoy reading my thesis, Karel Raats

Table of Contents

1. Ir	ntrod	uctio	n	6
1	.1	Cont	ext	6
1	.2	Rese	arch aim	7
1.3 Scientific and societal relevance			ntific and societal relevance	8
	1.3.	1	Scientific Relevance	8
	1.3.	2	Societal relevance	9
1	.4	Thes	is outline	9
2. T	heory	/		0
2	.1	Prac	tice theory1	0
	2.1.	1	Why practice theory? 10	0
	2.1.	2	What is social practice theory 1	1
	2.1.	3	What constitutes practices: in and inter practice 1	2
	2.1.	4	Practice reproduction and routine change1	3
	2.1.	5	Practice as entity or individual performances14	4
2	.2	First	operationalization: routine context	5
	2.2.	1	Introduction of the basic scheme1	5
	2.2.	2	Category clarification1	6
2	.3	Seco	ond operationalization: expanding the routine context1	8
	2.3.	1	Temporal context	8
	2.3.	2	Spatial context	0
2	.4	Thir	d operationalization: Sustainable disposition2	1
	2.4.	1	The mentality model 2	1
	2.4.	2	Deviation from the mentality model	3
3. N	1etho	dolo	gy 2	5
3	.1	Rese	arch strategy2	5
3	.2	Met	hods21	6
	3.2.	1	Data Gathering20	6
	3.2.	2	Validity and Reliability	8

3.2.	3 Analysis (methods)	28			
4. Analysis					
4.1	Routine context	30			
4.1.	1 Explaining some important elements	30			
4.1.	2 Food	31			
4.1.	3 Washing	33			
4.1.	4 Energy				
4.1.	5 Products	36			
4.1.	6 Findings: answering the first sub-question	37			
4.1.	7 Findings: answering the second sub-question	42			
4.2	Sustainable dispositions	44			
4.2.	1 The Sustainable Detached	44			
4.2.	2 The Sustainable Conformer	46			
4.2.	3 The Sustainable Proponent	48			
4.2.	4 Findings: answering the third sub-question	49			
5. Conclu	usions	52			
5.1	Answering the research question	52			
5.2	Discussion	53			
6. Reflec	6. Reflections				
6.1	Limitations of the data	56			
6.2	Research process	56			
7. Refere	7. References				
Appendi	х	64			
A Data	A Data on sustainability in routines				
A.1	A.1 Sustainability in food routines				
A.2	A.2 Sustainability in washing routines				
A.3	A.3 Sustainability in energy routines				
A.4	A.4 Sustainability in product routines70				
B Inte	rview guide	72			

1. Introduction

1.1 Context

It is now widely agreed upon that the challenges of climate change are such, that many familiar ways of life are fundamentally unsustainable (Shove, 2010). Sustainability herein can be defined in various ways, a good definition is given in the United Nations Brundtland Commission: *"meeting the needs of the present without compromising the ability of future generations to meet their own needs"* (World Commission on Environment and Development, 1987, p. 41). This has been operationalized further in 'the Paris Agreement' in 2015, where a total of 17 Sustainable Development goals have been set, with the intent of achieving them by the year 2030 (United Nations, 2015). These goals include, among others: ensuring availability and sustainable management of water and sanitation for all (6); ensuring access to affordable, reliable, sustainable and modern energy for all (7); ensure sustainable consumption patterns and production (12); take urgent action to combat climate change and its impacts (13).

Like most nations in the world, the government of the Netherlands has signed this agreement, eventually resulting in the Dutch 'Klimaatakkoord' in 2019 in order to meet the goals set by the Paris Agreement (Kamerstuk 32 813, nr. 342, 2019). One of the big pillars of the Klimaatakkoord is the reduction greenhouse gas emissions by 49% in 2030 (commonly measured in CO_2 equivalent) compared with Dutch emissions in 1990; and to further reduce emissions by 95% in 2050, compared with 1990. One aspect herein is decreasing household energy usage (energy-savings), which seems prudent considering that about one fourth of final energy consumption in the European Union is related to households (European Environment Agency, 2016).

In the Klimaatakkoord, municipalities are given a large role in realizing household related ambitions: transitioning neighborhoods to sustainable energy (e.g. away from natural gas); or stimulating landlords, homeowners and tenants to save energy or invest in more sustainable forms of energy generation. Some municipalities are even more ambitious. Nijmegen, for example, started efforts in 2011 to transition the cities' energy demands to be CO₂ neutral in 2045, in order to reduce emissions and mitigate global climate change (Nijmegen, 2011). Their general approach to achieve this is to combine both a reduction in energy usage as well as generating more renewable energy. Initial policy implementation have seen a reduction in CO₂ emissions from businesses, but household reductions are more limited (Nijmegen, 2018).

This failing to significantly reduce household related emissions is not necessarily attributable to the municipality's policies, or at least, it is not a problem unique to Nijmegen. There has been much written about the value-action gap (Shove, 2010; Hargreaves, 2011; Hampton, 2018), which refers to people who espouse green values, but do not act upon them (Blake, 1999), and how policies aimed at behavioural change often fail to overcome this. In Nijmegen as well, many are supportive of sustainable policies and energy usage reductions, as is evident from a recent questionnaire of citizens of Nijmegen (Fastenau & Koenen, 2020): with 84% finding it important sustainabilize energy usage, of which 59% say it is urgent. So even though more than half of the citizens of Nijmegen support sustainabilization, it has been hard to convert this support into significant household-energy reductions.

But, according to Shove (2010), the value-action gap is only mystifying if we suppose that values do (or should) translate into action. Both Shove (2010) and Hargreaves (2011) point for this failing at behavioural psychology and the ABC models – or behavioural economics as per Hampton (2018), which form the basis of many policies meant to influence household energy usage, but which has led to a minimal change at best. It is an attractive model for policy makers, as it generates a very clear agenda for effective policy (Shove, 2010); but, Shove, Hargreaves and Hampton argue (idem), that its individualistic and rationalistic nature does not do justice to the complexity of human behaviour.

In contrast to behavioural psychology/economics, practice theories focus on the daily activities and routines that a person performs, the *practices*, in which individuals play a role, but are not the object of analysis per se. It is the practice which is the focus of analysis, and it is said that this can lead to a more holistic and contextual view of what makes up said practices (Hargreaves, 2011; Shove et al, 2012).

This thesis will aim for that holistic and contextual view of sustainability in daily household practices, not necessarily to better understand the value-action gap per se, but to better comprehend what general barriers and incentives there are, and how they are influenced by the contextual situation in which practices are performed. For this practice theory will be used, with an extra focus on the spatial and temporal context in which they are performed. To make this thesis more comprehensive it will also consider the sustainable disposition that individuals may hold: how do the individuals who enact these daily practices view sustainability, and how does this impact the sustainability in their routines. It is hoped that with both the context of the practice as well as the context of the individual, this will lead to a better evaluation of behavioural change – at least in relation to sustainability, and so help the formulation of better fitting and more effective (municipal) policies.

1.2 Research aim

This research has a focus on every-day routines, and those who enact them. Consumption is part of most of them: be it through food for sustenance, water for washing, electricity for the operation of electrical appliances, and even the materials and energy that goes into the production of all products that we use throughout our daily routines. This research aims to contribute to knowledge on sustainability within these daily routines, to broaden and make this knowledge more comprehensive, so that this knowledge may be used to improve policy formulation aimed at behavioral change in relation to household sustainability. Thus, the focus is not on a singular routine, but rather on sustainable aspects in a variety of everyday routines in and around the household.

Herein the thesis will look at two distinct contextual perspectives. Firstly, the <u>routine context</u>, which can be separated into two aspects: the categorization of everyday routines along four categories, and the temporal and spatial context in which they are situated. What routine trends related to sustainability can be found, and how do they inhibit or propone sustainable behavior? Are there specific routines which are more resilient to change than others, or is there little room for sustainability to take hold? Is there a lack of sustainable knowledge or feedback, or do people know whether their routines are (un)sustainable or not? And how does the spatial and temporal context in which routines are enacted influence sustainability in those routines; when is sustainability hindered or enabled? Secondly, the <u>sustainable disposition</u>, by using an archetype model to represent the individual – the practice performer, in 3 different archetypes: how do they influence the uptake of sustainable routines; specifically, their stance and attitude towards sustainability? These facets are summarized into the following questions:

- RQ1 How do the two contextual perspectives routine context and sustainable disposition influence the incorporation of sustainability into new or existing everyday: what relations are there that inhibit or propagate sustainable routine adjustments?
- SQ.1 What are important meanings and competences related to sustainability within routines, how are they introduced, and how do they influence the uptake of sustainability in everyday household routines?
- SQ.2 How do temporal and spatial conditions influence the uptake of sustainability in everyday routines?
- SQ.3 Using archetype modelling on sustainable dispositions, how does each perspective influence the uptake of sustainable elements in routines?

1.3 Scientific and societal relevance

1.3.1 Scientific Relevance

By choosing practice theory as the scientific method rather than more common behavioural approaches, this report builds on diverting resources into the development of alternative models of social change and policy, as proposed by Shove (2010). Moreover, many policy-related documents themselves reference the need for a holistic approach (Shove, 2010; Southerton, 2012; DEFRA, 2005, page 2; Jackson, 2005, page v; Prendergast et al, 2008, page 47) which is build up from a solid and comprehensive knowledge base. A problem in policy aimed at societal change is the dependency on scientific information that stems from behavioural perspectives (Shove, 2010; Hargreaves 2011); information that isn't sufficiently holistic.

Additionally, it is proposed by multiple researchers that homes may prove valuable sites of study: "consider particular domains of everyday life, such as homes or workplaces, as the empirical arenas in which to study the grounded performances and negotiation of whole bundles of practice." (Hargreaves, 2011, p. 95-96); "the household is an entity at its own scale, but is of interest as a site where many broader social and cultural patterns and forces intersect" (Fam et al, 2015, p. 647); Studies have found that the behavioral and social practice effects of occupants is underestimated when assessing the energy consumption of energy-efficient households (Sunikka-Blank et al, 2012; Gram-Hanssen, 2013). Therefore, further research on household resource practices is required if these effects are to be addressed (Gram-Hanssen, 2010; Breadsell, 2019).

In doing so, the research thus adds to the specific operationalization of practice theory on household sustainability, thereby building on the research just mentioned, but also many others that haven't been

mentioned, such as: Hargreaves (2013) & Naus (2017), who have written about the need to make energy meaningful for households, in order for people to interact with it; Warde (2005), who has written about how consumption is derived from other practices, and that when people use goods and services, they do not consider their activities to be about 'consumption', but rather to be about doing things like cooking, travelling or cleaning; Bartiaux et al (2014) on homeowners' energy retrofits, and similarly, Judson et al (2014) on homeowners renovation practices.

1.3.2 Societal relevance

As mentioned prior, many researchers believe societal change is needed to tackle the problems of climate change, and that policy aimed to accomplish this societal change can be improved upon. This research seeks to broaden the knowledge on sustainability in households, and so achieve a more holistic and comprehensive account. It is hoped that this can be used by governmental bodies, especially municipalities, to formulate more effective policies in this area. Since this thesis uses data based on interviews with citizens of Nijmegen, it will be especially relevant for the municipalities of Nijmegen; and by extension, to similar municipalities in the Netherlands. Even so, municipalities outside of the Netherlands may also find parts to be relevant.

1.4 Thesis outline

Chapter 2.1 first introduces practice theory. Then, in three steps it introduces and operationalizes: the four different categories of daily routines (chapter 2.2); the spatial and temporal context in which routines are enacted (chapter 2.3); and a sustainable disposition model that was first intended to be used in this thesis, but that now function as inspiration from which to construct an own sustainable disposition model (chapter 2.4). Chapter 3 details the research strategy and methods of this thesis. The results and analysis form chapter 4, first focusing on the routine context in 4.1, and then the sustainable disposition in 4.2. Chapter 5 draws the main conclusions, and discusses them. And finally, chapter 6 reflects on the limits of the data and the research process.

2. Theory

The theory starts with an introductory segment on practice theory (2.1): what does it entail and why is it used in this thesis? Paragraph 2.2 will introduce and operationalize the *routine category*, which is part of the <u>routine context</u>. In 2.3 the <u>routine context</u> is expanded with *routine conditions*. And finally 2.4 adds the last part of the operationalization: the <u>sustainable disposition</u>.

2.1 Practice theory

2.1.1 Why practice theory?

It has already been mentioned shortly in the introduction, but the reasons for picking practice theory can be clarified somewhat further. In an opinionated paper, Shove (2010) argues against the use of the psychological ABC model of human behaviour within policy aimed at societal change: often times such policy implementations turn out ineffectual and progress is barely made (Shove, 2010; Hargreaves, 2011). The ABC model sees societal change as driven by 'A' attitude, 'B' behaviour, and 'C' choice, in which attitude (A) is believed to drive the kinds of behaviour (B) that individuals choose (C) to adopt (Shove, 2010). An attractive feature of such a model is its openness to the inclusions of variables (Shoves, 2010; Hargreaves, 2011). Critics have argued that such approaches are excessively individualistic and fail to appreciate the ways in which context is intrinsic to the performance of social practices (e.g. Bedford, 1999; Hobson, 2003; Nye and Hargreaves, 2010; Shove, 2003; Southerton et al., 2004; Spaargaren and Van Vliet, 2000).

Shove (2010) then looks at the theory of transition management, which recognizes that societal transformations "not only involve new technological artefacts, but also new markets, user practices, regulations, infrastructures and cultural meanings" (Elzen et al, 2004, page 1). In this theory, innovation is characterized by ongoing interactions between elements in a coevolving system: where*in* consumer behaviour is located, as opposed to existing externally (as per the ABC framework). Radical innovations are those which redefine the rules of the game; effective responses to climate change entail parallel processes of decay and the radical unmaking of unsustainability (Geels et al, 2008; Pantzar and Shove, 2006). Thus, Shove argues (2010), transitioning towards sustainability does not depend on policy makers for persuading individuals to make sacrifices, and neither does it require increasing efficiency within contemporary processes. Instead, societal innovation entails the erosions of contemporary rules, the calling into question of the status quo; enabling more sustainable regimes of technologies, routines, conventions, forms of know-how, markets and expectations to take hold across all domains of daily life.

In contrast with conventional, individualistic and rationalist approaches to behaviour change, as exemplified by the ABC-model, practice theory de-centres the individual from analyses; instead, it turns attention towards the social and collective organization of practices (Hargreaves, 2011). It is suggested that practice theory addresses many of the shortcoming of the ABC model. Its utilisation aims to provides a more holistic and grounded perspective on behaviour change processes as they occur in situ (Hargreaves, 2011; Shove et al, 2012). For this research, it is hoped that practice theory can provide more context about the ways in which sustainability is part of daily routines: when is sustainability considered during various routine activities, be it conscious or unconscious? And what instigates and inhibits the incorporation of sustainability within routines?

2.1.2 What is social practice theory

Social practice theory originates from Bourdieu (1976) and Giddens (1984), who sought to overcome the structure-actor dualism. It emphasizes how practices, or routines, rather than signs or abstract structures, are key to both constituting and understanding the social realm (Gram-Hanssen, 2010). More recently, it has been Schatzki (1996) and Reckwitz (2002a; 2002b) who have drawn on, and expanded the work of Bourdieu (1984) and Giddens (1984) in their descriptions of the routines of everyday life. Both underline the collective aspect of practice: the individual performer as a carrier of practices (Reckwitz, 2002b); with practices as coordinated entities with temporal and spatial dispersed nexuses of doings and sayings (Schatzki, 1996). According to Welch and Warde (2015, p. 8), Shove et al. (2012) further builds upon this: "The programme we have associated with Shove ... advances an abstract description of dynamics between and within practices (e.g. Shove et al. 2012), but without seeking to produce a unified model of change that can be applied across whole categories of practices.". It enables identification of critical, context-specific (often recursive) processes and complex causal interactions that result in resource-intensive patterns of everyday consumption. Welch and Warde (2015) finally conclude that: through positing the generative interdependencies of structure and agency, practice theory overcomes their traditional antinomy; thereby corresponding with Shove et al. (2012), who suggests it possible to describe and analyse change and stability without prioritizing either agency or structure. However, they also caution that theories of practice that lack analytical differentiation between very general cultural understandings and practice-specific orders of meaning, run the risk of obscuring the structuring effects upon practices of widespread, adjacent or overarching cultural discourses.

Practice theory has been described and operationalized in various ways, as can be seen in figure 1, in which Gram-Hanssen (2010) has listed the core constituents of practices as described by each theory. This scheme neatly shows in what ways the different theories correspond to each other, although it does not account for differing intricacies of the constituents. A prominent vacancy can be seen in Schatzki's theory, who does not include any materialistic entity within the core constituents of practices.

Schatzki (2002)	Warde (2005)	Shove-Pantzar	Reckwitz
		(2005)	(2002b)
			Body
			Mind
Practical	Understandings		The agent
understanding		Competences	Structure/
			process
Rules	Procedures		Knowledge
Teleo-affective	Engagement	Meanings	Discourse/
structures			language
	Items of	Products	Things
	consumption		

Figure 1 Key elements in understanding of practices (Gram-Hanssen, 2010) Taking the model of Shove-Pantzar (2005), practices consist of 3 main element classes. The first important element class (numerically – not by rank) which constitutes a practice are *competences*. In their version, they have lumped together different forms of understandings that others have separated, such as knowledge and practical know-how. The second element, *meanings*, represents the social and symbolic significance of participation, or enactment, at any one moment; but, it is an element *of* the practice, not something that stand outside or that figures as a motivating or driving force (Shove et al, 2012). The final element, described as products, is later labelled by Shove et al (2012) as *materials*; it embodies all tangible things such as products and items that are required for enaction of the practice. This more general categorization of elements can be seen as simplifying moves (Shove et al, 2012) to make the theory more easily applicable, while still retaining the core of what constitutes a practice. While this particular description of practices may not include all the intricacies of the other theories, this will be the chosen approach for the paper, since it allows for focus on the core elements of what makes a practice. It will be the latter writings of Shove et al (2012) which are taken as the core for practice theory in this thesis.

2.1.3 What constitutes practices: in and inter practice

The elements described in the preceding paragraph, are perhaps most easily explained through an example. Take for example car driving, it requires: *materials*, such as a car and infrastructure; *competence*, the ability or general know-how to drive it; and finally, car driving is situated within *rules and meanings*. Naturally, is not the conclusive set of elements which constitute car-driving; moreover, this set of elements changes depending on the specific type of performance. A taxi chauffeur driving a passenger to their destination in India will have a different set of meanings, competences and perhaps even materials which make up this practice, compared with a commuter on their way to work in the Netherlands. Even so, both practices will also have many similarities. Comparing both to a commuting student using public transport, and the correlation will be more vague, but there will still be some: travelling, getting ready for work, clothes, bags, temporal & spatial consideration, etc. This exemplifies the interconnectedness of practices.

In her framework, Shove et al (2012, p.92-93) further expands this via the use of bundles and complexes: *"Bundles are loose-knit patterns based on co-location and co-existence of practices. Complexes represent stickier and more integrated combinations, some so dense they constitute new entities in their own right."*. These inter-practice relations have *"emergent, cumulative and often irreversible effects for individual practices"* (idem, p.93), and are sometimes referred to as the multiplicity of practices (Warde, 2005; McMeeking & Southerton, 2012). A striking example (Shove et al, 2012) is how emergent cardriving skills and rules, such as signalling and overtaking, drew on the skills of horse-riding; and how a car body was initially not only modelled after carriages, but also custom made by carriage constructors. In addition, car-driving started as an adventurous and healthy endeavour with a requirement in mechanic skills in order to repair the frequently failing machines. These being masculine traits (certainly at the time), linked car-driving with masculinity (figure 2). A link which has perhaps stuck to this day.



Figure 2 Elements between practices (Shove et al., 2012)

2.1.4 Practice reproduction and routine change

One additional thing to note, is that elements, however they are defined, are somehow 'out there' in the world, waiting to be linked together. The existence of a practice is then the integration of various elements, and their existence is constantly reproduced through recurrent performances or re-enactments (Reckwitz 2002). This suggests that stability and routinization are not end point points of a linear process of normalization, rather: they should be understood as ongoing accomplishments in which similar elements are repeatedly linked together in similar ways (Shove et al, 2012). Practice reproduction implies aspects of both inertia as well as transition (Warde, 2005; McMeeking & Southerton, 2012). The inertia follows from the recurrent reproduction in similar ways, indicating a certain path-dependency: past performances shaping future performances. But there is also an opening for change, in the way that performances can be slightly different each time; which - whether inadvertently or on purpose - lead to a building up of new ways of performing over time.

According to Shove et al. (2012, p. 111), the reproduction of practices is dependent on monitoring: "Monitoring, whether instant or delayed, provides practitioners with feedback on the outcomes and qualities of past performances. To the extent that this feeds forward into what they do next, it is significant for the persistence, transformation and decay of the practices concerned." Monitoring, by oneself or by others, is thus part of the enactment of a practice. Describing and materializing are described as two modes of monitoring in the sense that they capture and to some extent formalize aspects of performance in terms of which subsequent enactments are defined and differentiated. She exemplifies this by showing how snowboarding evolves as a sport through the naming of tricks, and later the formalization of conventions during (Olympic) competition (idem, p. 114) : "in valuing certain skills and qualities above others, they define the present state of play and the direction in which techniques and technologies evolve." A third mode of monitoring is mediation, in snowboarding manifested through the making and sharing of videos. Ultimately, it's important to connect separate performances. It's good to know you're doing well, or not so well. In this role, signs of progress are often important in encouraging further effort and investment of time and energy (Sudnow, 1993; Shove et al, 2012). Because reproduction is linked to the sharing of information and know-how, accounts of social interaction will be treated as competency-elements in this research.

For sustainable routine change, Gram-Hanssen (2010) further highlights the social aspect: that a change in practice may emerge out of social relationships, something that people share with each other. Which can be linked with Hobson (2003, p. 107-108), who states that: "practices change not through exposure to scientific knowledge per se, but through individuals making connections between forms of knowledge that link their own, every day and experiential environments to broader environmental concerns". For experiential environments (i.e. when there is learning based on experience and observation) often go hand in hand with social interaction.

2.1.5 Practice as entity or individual performances

Shoves et al (2012) modes of monitoring focus on the development of the practice itself, with the practice as its own entity. And while it may seem somewhat redundant on the meso-level which practices as entities focus on, depending on how specific a practice is defined, the individual plays a larger role. Consider for example the average Dutch eating practices, as opposed to those of Dutch students, or even more narrow, those Dutch students which follow a certain study. What constitutes as eating practice may vary wildly according to these various constraints. In line with the individual take of the sustainable disposition in this thesis, it seems prudent to consider the individual perspective within practices as well.

When looking from the individual perspective, it becomes clear that practices can be adjusted outside of their immediate enactment or enactment observation: individuals may learn new information on a topic and change their practices accordingly. For example, during interviews (chapter 4), respondents sometimes state that certain information was first learned during conversation with others. And so, that from the perspective of the individual, a practice is changeable outside of its direct enactment (or that its enactment has a very broad definition, in which conversation about a practice at another moment is included). Additionally, what this example once more highlights is the importance of social interaction that shapes how a practice is reproduced. And accordingly, the potential influence an individuals have on how a particular practice is performed by others in their social groups.

To summarize the past chapters, and link with sustainability, two main points: one, both inertia *and* transition are inherent to the practice. Some elemental links stay, whereas others go, and some practices disintegrate or change when links between elements are no longer sustained (Shove et al, 2012). In this way, a practice can be readjusted to be more sustainable, for example, through the incorporation of meanings and competences that focus on limiting resource usage, or a material (product) which enables a more environmental friendly re-enactment of a daily routine. Two: that sustainabilization of daily-routines is something which *may* occur across a variety of routines, with interconnecting elemental links that can influence the efficacy and commitment to sustainabilization of other daily routines.

2.2 First operationalization: routine context

2.2.1 Introduction of the basic scheme



Figure 3 First operationalization

Figure 3 shows a first simple schematic of the operationalization. The term Sustainable intentions is meant to signify that the research focuses on those who recognize the necessity of a sustainable society, and are in principle willing to change their routines to be more sustainable; although this says nothing about what kind of effort they are willing to exert to accomplish this. The right of the scheme depicts a successful sustainable routine change. Sustainability herein is is characterized as following the subset of Sustainable Development Goals discussed in the introduction (6, 7, 12, 13): limiting climate change through a decrease in CO_2 emissions; limiting resource consumption, such as electricity and water, as well as material waste; promoting recycling, reusing and longevity. So, when a diet is changed to reduce meat consumption, a shower routine is shortened to reduce water consumption, or a product is bought on the premise that it is more resource-efficient through longevity, that will be termed *sustainable routine adjustment/change* (or: *sustainabilizing a routine*) and *sustainabilization*. Note that it is thus not necessary for a routine to be perfectly sustainable in a literal sense in order for it to be termed as such, simply making (perceived) sustainable progress towards the Sustainable Development Goals is enough.

A small clarification: a routine can be said to consist of both thought as well as actions. For example, during an interview, a responder stated to think a lot about the hot water he uses when showering, but that this didn't always lead to (sustainable) action. Such routine changes will be considered as well, since sustainability is now considered where it wasn't before: it is a focus during the routine performance. Naturally, changes in thought will be differentiated from changes in action.

The middle part adds the first aspect of the <u>routine context</u>: the *routine category*; this reflects the kind of routine (practice) which is performed/discussed. Because there are many different 'everyday' routines which are situated in and around the household, they have been grouped into four categories: food, washing, energy and products. This is done with the assumption, similar to bundles and complexes that are introduced in 2.1.3, that some general trends can be recognized in routines within a certain category, and that these trends will be different between categories. These categories will be clarified further momentarily, but let's first look at what this operationalization entails.

When looking at routines within these categories, the focus will be on competences and meanings that make up those routines, as long as they are related to sustainability in some way (e.g. by being part of a more sustainable rendition, or perhaps through barring such a rendition). As such, materials won't be looked at in this research. The reason for this is twofold. First, sustainability can be both present in the meanings and competences of a routine, but as a concept, it does not have an immediate materialistic representation. An example from an interview: wanting to be sustainable in food consumption leads people to choose certain diets (less meat, vegetarian, vegan) – sustainability is then something desirable, and attached to certain foods; as for competences, the knowledge that some food-products are more sustainable than others, or another example: the know-how of making tasty vegetarian recipes. Naturally, materials can influence the sustainability of a routine, for example fake-meat products, or if an appliances uses less energy. But – and this is the second reason, this would be more logical to do if one looks at a single routine: a computer versus a laptop versus a mobile phone, for example. Because this research looks at a broad selection of routines, that would result in a wide array of different kinds of materials; too many to properly take into account. Additionally, the research seeks to compare the various sustainable elements that make up different routines: for example the meanings and competences that differentiate sustainability in food routines to those in washing routines. Comparing for instance, a washing machine to a refrigerator to food products is not so interesting.

For each category, there can be some initial expectations for important elements, which may influence their sustainable enaction: for food, taste and possibly health (Halkier, Jensen, 2011); hygiene and comfort for washing routines (Shove et al., 2012); for products, costs are obvious, although this may be seen in other categories as well; and more generally, the tangibility of resource usage, which may influence respondents' perception of resource usage (Gram-Hanssen, 2010). Ultimately, it well be these and other elements (meanings and competences) which influence whether sustainable intentions can be transferred into actual sustainable routine change.

2.2.2 Category clarification

Now, to clarify the categories further: food includes consumption of food as well as grocery shopping; washing contains anything to do with washing routines such as washing clothes, dishes, showering etc.; energy entail the use of energy (electricity, gas, etc.) in the household, except for those related to washing; and products is about the purchase of a new (non-food; electrical and non-electrical) products, whether done online or offline. The goal herein was to be able to filed a routine under the category which best represent the conscious and unconscious thoughts and actions, that make up the performance of a routine. For example, the washing category contains anything that has to do with washing routines, because washing the dishes may be perceived as being similar to washing clothes; rather than it being part of a food routine.

The reason for these distinctions may not be entirely clear, and indeed, it is not necessarily the best way to build up the categories. Grocery shopping, for instance, can be filed under products, as it involves the purchase of products. For this research, the assumption is then that when someone goes grocery shopping, they'll be thinking about how to prepare and/or what to consume regarding food-products. And that this differs significantly from considerations when buying non-food products. However, it is likely that grocery shopping has some similarities to both food preparation & consumption, as well as the

buying of products. Another option would be to have it as its own category altogether, but that complicates the research and interpretation, especially since this can be argued for multiple routine categories.

Washing, however, *has* been separated from energy, even though washing is generally among the more energy intensive routines (Shove, 2003; Breadsell 2019). There are a couple of reasons to separate the two. Firstly, washing uses not only energy, but also water. The use of water as a resource may be more tangible than using energy (Gram-Hanssen, 2010): water can be sensed physically (with sight or touch), whereas energy is more of a conceptual knowledge; there is generally no flowing electricity which can be readily observed (or at least there shouldn't be). Secondly, washing has added connotations which energy doesn't have: washing is also about hygiene and sometimes comfort (Breadsell 2019; Shove 2003).

The reasons to specify the purchase of products as being different from their use (within the energy category) is because it is assumed that the routine of purchasing a product is more similar to the purchase of another product, than its similarity to said product being used for what its bought for; even if the purchases are done for products used in different categories. To give an example: the general actions and considerations that make up the purchase of a washing machine, is assumed to have more in common with the purchase of a fridge or television, than it will have in common with using said washing machine for washing routines. Additionally, the purchase of a product can be very influential in the sustainability of the routine. For instance, it can be more sustainable to purchase a new fridge than it is to continue using the old one, because of differing energy requirements (Essent, n.d.). Additionally, a purchase generally requires an immediate transaction. As such, money is a large focus in the purchase of a product. While it may also cost money to operate a product, this is not as tangible (similar to the separation of the washing and energy routines). And indeed, during the interviews respondents are generally not so knowledgeable about which routines or devices use a lot of energy.

These categories have some overlap, as it isn't always immediately clear what category a routine should belong to. In general, it is the sustainable aspect of the purchase or operation which is analyzed, and which determines the categorization. However, even though the distinction is perhaps a little arbitrary at times, categorization of routines makes analysis and interpretation of the data simpler and more clear.



2.3 Second operationalization: expanding the routine context

Figure 4 Second operationalization: expanding the routine context

The second operationalization completes the routine context by adding routine conditions. This is primarily a theoretical account with the goal of filling out the context in which routines are enacted. In this thesis the routine conditions consists of temporal as well as spatial organization of practices that constrain and/or enable the routines that take place. These are chosen because they represent an important part of the context of any enacted routine. Furthermore, they affect not only how the practice is performed through the constraints which they inherently carry, but they're also important aspects in their rigidity (Warde, 2005; McMeeking & Southerton, 2012), and thus their conformity to sustainabilization. Now, aside from the meanings and competences that make up certain types of routine, there is also the temporal and spatial context in which they are enacted, which influences how readily sustainable intentions lead to sustainable routine change.

First will be discussed the general temporal context that is inherent to the practice, and which determines how practices are organized. Secondly, the spatial context in which practices are enacted.

2.3.1 Temporal context

First we start with the temporal context, although with the explicit notation that temporal and spatial context is often linked. For example, when meeting up with other individuals (like a friend), there needs be an agreement and commitment to both time and place, in order to be able to partake in any meaningful shared practice enactment. Even an online space can be considered a spatial context, although its context and constraints may typically differ from most offline spaces.

To look at the temporal context we employ the five dimensions of time, as described by Southerton (2006) and Fine (2008): *duration, tempo, sequencing, synchronization* and *periodicity*. Below will be given a short description of each term, after which its relevance to sustainability (and this thesis) will be explored.

The *duration* of a practice can be linked to Shoves' (2012) concept of time as an 'arena in which practices vie for time': there is only so much time in a day, and so much time for each practice. Spending more time on the one often means a decreased duration for another. In light of this, any kind of routine

change can be contentious, since routine change generally requires time investments; if only because the practiced way of doing is easier to perform than a new, still to be learned routine.

The *sequencing* of practices entails the ordering of activities. In contemporary society, there is a perceived increase in segmentation and organization of time - sometimes called the Taylorization (Hochschild, 1997; Southerton, 2006) -, whereby tasks are broken down into their component parts (fragmented) and re-sequenced to maximize temporal efficiency (Southerton, 2006). An example is the increased multi-tasking done by women during domestic tasks Sullivan (1997). Hochschild (1997) argues this to be the result of an intensification of global capitalism, resulting in increased durations of paid work, thereby squeezing the time for domestic matters.

In addition, Southertons' (2006) analysis sees a threefold temporal split of practices: 'fixed' practices have a specific position in the sequence, and are often those practices which require either co-participation of other people, obligation, or personal commitment. Specifically, he mentions that the involvement of others (especially those outside of the household) require a comparatively high degree of coordination and arrangement. The second type, 'inter-related practices', have a more loose fit into the practice sequence, generally being enacted around fixed practices (spatially as well as temporally). And finally, 'time-fillers': the more whimsical practices which are implied to be used for filling time-slots.

Thus, the temporal organization of a day can be characterized as being constituted by practices that have a fixed (temporal) position within schedules, often related to obligation (work, study etc.), co-participation with other people, or personal commitment (sports, hobbies, self-actualization); these are often longer in duration. And, surrounding those, are the inter-related practices; and the time-fillers, which are doing what their name suggests.

Periodicity refers to the frequency and regularity (meaning: in the same time slot) with which practices are conducted. According to Southerton (2006), practices with household members have a high degree of regularity, as opposed to practices with non-household members; even if the latter were done frequently, it was rarely regular.

Another account of periodicity and sustainability is how the average person has increased the number of times they wash and shower; with showering being more of a daily (or even twice a day) than a weekly practice now, as highlighted by Shove (2003). And while – as Shove states – this can be explained by a multitude of things, such as: different normative hygiene expectations, availability of resources, infrastructure and technology. There is also a link with sequencing, such as showering after sports or when waking up in the morning.

Tempo refers to the rate or speed a practice is performed at. And finally, *synchronization* is the enactment of multiple practices at once. While these two are not necessarily more linked than the others, they do share a common aspect in that an increase in tempo as well as synchronization seemingly makes a faithful performance of the practice(s) more tasking. After all, there is more to pay attention to in the same amount of time, implying either an increase in focus, or a 'lesser' performance of the practice. Additionally, both share research observations that indicate they exist to a higher level these days. From Southerton (2006, p. 437-438), on tempo:

"Together these processes produce an intensification of activities and experiences, because spatial constraints on the timing of activities have been compressed and individuals exposed to an ever-expanding plurality of lifestyles instantaneously amenable through global information and communication technologies and the rapid distribution of global commodities (Giddens, 1991; Harvey, 1990). It is in this context that Darier (1998) suggests contemporary lifestyles are experienced as demanding of a need to experience evermore cultural activities, and, subsequently, being busy and conducting practices at a fast tempo becomes symbolic of a 'full' and 'valued' life."

Similarly, a different term linked to synchronization is *flexibilization*: switching from a '9-to-5, 5-days a week job, to the 24-hour society (Garhammer, 1995; Breedveld, 1998). This is posited as allowing more personal control over the sequence of work activities, thereby being able to develop strategies which allow for the synchronization of work and leisure time.

2.3.2 Spatial context

Because the spatial context is often linked to the temporal context, this chapter won't have many new points to address. But a recollection with the focus on the spatial context is still helpful. Firstly, social interaction generally necessitates a shared time slot, and therefore also a shared space (although online spaces somewhat muddy the water). Secondly, there are temporally fixed practices in a day, around which other interrelated practices are enacted (sequencing) – naturally, this necessitates some spatial proximity. Additionally, similarly with synchronization, not all practices can be simultaneously enacted, for spatial (and other) constraints.

These temporal-spatial-practice interactions are therefore restrictive for which practice is enacted, and how it is enacted. However, there are also inherent limits in interaction during practices according to the practice itself (e.g. showering), as well as the space in which they play out: outside of the kitchen and living room, practices may not be observed by those outside the household. For example, filling up a dishwasher will be more readily observed than filling up the washing machine: one generally being in the kitchen and the other often in a room less used by guests; but also because practices which use a dishwasher (food-practices) are more often enacted together. Moreover, it can be expected that those routines which necessarily play out within the house are more often enacted alone or solely with other household occupants, than those practices which take place outside of the house.

Another important consideration is that for many every-day routines, it is the house or room which determines the spatial context. Therefore, when moving house the spatial context of routines change. This requires a more conscious approach to the enactment of the practice, because a one-on-one re-enactment is no longer possible. Such a 'restart' of the practice therefore requires a more thoughtful re-establishment of prior elements and their links, to make the practice work within these new conditions. This inherently draws more cognizance to the performance of the practice, potentially allowing for more reflection about the routine in general. After all, a completely automatic re-enactment is not immediately possible.



2.4 Third operationalization: Sustainable disposition

Figure 5 Third operationalization: Sustainable disposition

The final addition is the sustainable disposition, and with this the operationalization is now complete. Any intentions or willingness to sustainabilize one's routines will thus be evaluated alongside two contextual layers: the <u>routine context</u> and the <u>sustainable disposition</u>. The routine context consists of: the *routine category*, with different elements depending on the kind of routine that is being enacted; and *routine conditions*, the spatial and temporal context in which routines are enacted. As for the new addition, the sustainable disposition determines the attitude that individuals will have: the level of interest, focus and effort towards sustainability in their daily lives. Is it seen as a chore, or perhaps a responsibility to society; or is it linked to idealism and self-improvement. Since routines are often not so easily changed, these aspects give a first indication of how likely it is that someone adjusts their routine to be more sustainable. From the data, three archetypes have been constructed (one for each corner in the triangle) which position the sustainable disposition that individuals may have.

In the next chapter (2.4.1) first follows some background information on the Mentality model on which the sustainable dispositions are based. This chapter is closed with an explanation of the reasoning and goal in developing an own model for sustainable disposition in 2.4.2.

2.4.1 The mentality model

The mentality model is a segmentation tool developed by Motivaction to segment people based on their lifestyle or life situation. It is used to better define, classify and approach target audiences, and helps to gain insight and understanding of what motivates a target audience and how trends arise within a broader context (Motivaction, n.d.). As Motivaction is a private organization whose business model is built around population segmentation models, it is not exactly clear what the model is based on. However they collaborated with RIVM, the Dutch national institute for public health and the environment, and made a joint report (2004) in which some theoretical premises can be found. This report addresses insight from the ABC-models as described in chapter 2.1, following the classical

paradigm of Fishbein and Azjen (1975). This focuses on behaviour as explained by drivers such as positive or negative attitudes and behavioural beliefs leading to an eventual rational evaluation.

Another part of their approach seems to stem from life-style theory (Spaargaren, 2007). Lifestyles are practices of relatively free, autonomous, and reflexive social agents motivated by distinct subject outlooks – one that confronts life as a series of choices (Giddens, 1991; Binkley, 2007). Yet at the same times, lifestyles take place within the determination of social structures (Bourdieu, 1984; Binkley, 2007). As such, lifestyles aim to bring together processes central to sociological analysis, and are thus capable of linking macro level consideration of social structural causes with micro level consideration of creativity, choice and identity (Binkley, 2007).

What we presently call 'lifestyle theory' links consumer identity to consumption practices by positing that identity manifests as, and is informed by, engagement in lifestyles (Giddens, 1991; Spaargaren, 2003). A lifestyle may consist of several related practices, say, camping, hiking and driving a four-wheel drive vehicle (Binkley, 2007). Constructing a lifestyle is in part, a reflexive process—individuals manage consumption practices and behaviors to determine and express an identity while negotiating the tensions, inconsistencies and conflicting values that arise across different contexts (Evans and Jackson, 2007, Giddens, 1991, Spaargaren, 2003). As a result, lifestyle construction is a fluid process, meaning that neither identity nor activities are entirely stable but are in some cases open for negotiation (Binkley, 2007). Consequently, lifestyle theory seemingly lies close to practice theory, however, it appears to allocate a bigger role for reflexive – and thus rational – processes.

Vijf Tinten Groener

The first model made by Motivaction (n.d.) is the mentality model which segments people into a groups, based on shared values regarding work, leisure time, politics, ambitions and goals in life, with other people in their group. The model was constructed with the Dutch population in mind, resulting in eigth different groups, which can be termed archetypes: the most typical or perfect example of a particular kind of person or thing (Oxford Learner's Dictionaries, n.d.).



Figure 6 Overview of the 5 segmentation groups based on their status and values (Motivaction, 2020). On the vertical-axis, status: low – mid – high; on the horizontal-axis, values: traditional (conservative) – modern (owning, indulging) – postmodern (flourish, experience)

Motivaction has expanded on their mentality model with various new models, modifying it so that it can be used in more specific situations. On request of the ministry of Housing, Spatial Planning and the Environment, Motivaction has (in cooperation with Telos) developed a general value type typology which is more geared towards sustainable development (Spaargaren, 2007). RIVM, in collaboration with Motivaction and Telos, has used this typology in their report on *societal appreciation of sustainable development* (2004). Motivaction has since further developed sustainability targeted models; the newest is 'Vijf Tinten Groener' (Motivaction, 2020). It recognizes five different archetypes (loosely translated to English), with a short summary of their core characteristics:

1) Plichtsgetrouwen ~ Dutiful

They have traditional values, seeking a calm, regular and humble life; with family, and often religion, as their cornerstone. Propriety, decency and soberness are the norm, it is seen as part of their duty as citizens.

They are resistant to change (whether sustainable or not), and are not overly enthusiastic about innovation.

- Structuurzoekers ~ Structure Seeking Often uninformed and sceptic about climate change and its severity. Sceptic about climate change and its severity, often seeing no reason for sustainable behaviour.
- 3) Statusbewusten ~ Status Conscious Individualistic, ambitious and positive about the future, but also involved in societal issues. While cognizant about sustainability, they are not worried or very preoccupied with its problems. They generally believe technology and innovative entrepreneurship will bring solutions and progress.
- 4) Verantwoordelijken ~ Responsibles Cognizant of climate change and their ecological footprint, they worry about local as well as global environmental damage. They want to contribute to a sustainable society, and see herein a shared responsibility for government, companies and citizens. While generally positive about sustainable innovations, they won't disregard ethical considerations.
- 5) Ontplooiers ~ Bloomers

They are open and actively looking for new experiences; personal freedom is a cornerstone in their life. They have their own interpretation about sustainability; often choosing creative ways to live sustainably, over more general social approaches. They look for innovations; however if forced to choose between sustainability and freedom or joy, they will choose the latter. Consequently they are not always as reliable in their sustainable endeavours.

2.4.2 Deviation from the mentality model

Initially this research was meant to use the mentality model 'Vijf Tinten Groener' to consider the sustainable disposition people may have, which was to be verified during the interviews. However it was found that the overlap between respondents and archetypes, as well as the overlap and differences between the archetypes themselves, was unclear and ambiguous. That isn't to say that the model is

necessarily wrong or bad, but that it was hard to determine to which of the archetypes a respondent would incline towards; thereby hindering the goal of finding grounded statements and relations.

And, while the mentality model can still be used to contextualize the routine-results from the interviews, it would become a patched together construct, with limited verifiable grounding in reality. Instead it was preferred to ground the sustainable disposition in the interview data, thereby making any statements more easily verifiable, and allowing conclusions and links to be made on the basis of interview data rather than a preconceived model. The mentality model has been used as inspiration upon which to base the new model, although any statements regarding the characteristics of archetypes are made on the basis of the interview data.

Another upside of the newly constructed model is the ability to focus on those who acknowledge the necessity of a sustainable society, thereby making it fit better with the topic of the thesis: sustainability in daily routines and the adjustment thereto; rather than including those who do not see the necessity of a sustainable society. A downside is that the newly constructed model has less characteristics per archetype, and so is less comprehensive in its characterization, with its statements being more generalized than those of the mentality model. However, as the model fits better with the routine aspect of the research, the findings are more meaningful. Additionally, the research has found different characteristics to focus upon when describing the sustainable disposition of the respondents when compared with the mentality model, thereby further indicating the benefit of a different perspective.

Finally, the three constructed archetypes are meant as ideal-type characters. However, an individual, or indeed a respondent, is not beholden to only one archetype: they may display characteristics from all archetypes, dependent on the topic or context. This is in line with the idea of lifestyle theory as just discussed (chapter 2.4.1), with a lifestyle being a reflexive and fluid process. The archetypes are meant as insight into the possible sustainable disposition an individual may have, and so add context as to the how and why sustainability is or isn't part of a particular routine. It is *not* meant as a model to predict how a particular person will act in a specific or future situation, but rather, to show what different attitudes people may have, and how those will influence sustainability in routines.

3. Methodology

First will be addressed the research strategy (3.1), with chapter 3.2 containing the methods for this thesis.

3.1 Research strategy

The research follows a social constructivist paradigm, with the focus being theory building through inductive reasoning and interpretation. The constructivist paradigm allows for constructed realities and subjectivist, transactional findings (Guba & Lincoln, 1994; Moses & Knutsen, 2012). In practice theory, it is the practice which allows sense-making of the world (Hargreaves, 2011), it is the object of analysis, and reality is constructed from the practice. While the individual plays a role as practice-performer, it is the practice itself which becomes the core unit of analysis (Hargreaves, 2011 & 2012).

However, this research also seeks to couple the sustainability in everyday practices to an individual's disposition towards sustainability. As explained this was initially meant to be done via the mentality model, but was changed into creating own archetypes that better fit the research. Herein the disposition can be thought of as a 'culturally derived and shared orientations towards the performance of practices' (Southerton, 2012). The construction of such archetypes are also in line with and supported by the constructivist paradigm.

Practice theory will be the lens through which both routines and individuals are observed, specifically with competences and meanings from the Shove model (2012); materials are thus not focused upon, as has been explained during operationalization in chapter 2.2.1.

The design of this research is a case study, focusing on households in Nijmegen; loosely following ethnographic research strategy. An ethnographer is interested in examining shared patterns focussing on an entire culture-sharing group. The research describes and interprets the shared and learned patterns of values, behaviours, beliefs and language of the culture sharing group (Creswell, 2018). The culture as object of research, can here be interpreted as the 'household practices' which are performed. The group of study are then those who have the same sustainable disposition. It is perhaps not a typical ethnographic research, but a similar combination has been utilised by other practice theory researchers (Judson, 2014; Bartiaux, 2014; Hargreaves, 2011).

Ethnographic strategies seek to provide descriptions of events or social meanings, taking a holistic stance and incorporating a multitude of perspectives (Johannesson & Perjons, 2014). However, ethnographers also typically spend a lot of time living together with the people they are studying and use multiple data collection methods including interviews, observations and documents (Johannesson & Perjons, 2014). Moreover, interviewing projects based on one-shot interviews would also not constitute ethnographic interviewing (Atkinson, 2011). It should therefore be reiterated that this is not ethnographic research, but that it follow the ethnographic design loosely, mostly as a guide to provide a thick and contextual description of sustainability within different household practices.

3.2 Methods

3.2.1 Data Gathering

To prepare the thesis and interviews, an expert with practical knowledge of ethnographic research related to household energy consumption/production has been contacted for advice. His advice, aside from referring to his dissertation ('The social dynamics of smart grids: On households, information flows & sustainable energy transitions' - Naus, 2017), was twofold:

- 1) Ask questions relating to specific moments in everyday life, in order to build up a 'thick description'. For example; "can you remember the last time that....".
- 2) Having a somewhat structured interview guide is advisable. It is especially important to choose whether you initiate the interview with an introduction about your research, or whether you introduce the interview as trying to understand daily routines and elements within it. Whereas the former induces a normative charge from the get-go, possibly leading to socially desirable answers, it does make it easier to focus the interview.

Point 1 has been echoed by other researchers as well: "Which food did you make last time you cooked dinner" (Halkier & Jensen, 2011, p. 110). These are the more descriptive style questions, and have been incorporated in the interview. Incorporation wasn't perfect however: the interviews were quite long, and had comparatively a lot of topics to cover. This meant that there was limited time to delve deeply into the contextual benefit of descriptive style questions.

As for point 2, focus was chosen over the normative-free charge, partially because it was deemed more important to focus the interview; which seems like a good choice considering the time constraints. Moreover, the normative-free aspect was deemed limited, because of the nature of the questions, which were often directly related to sustainability.

Eleven semi-structured, in-depth interviews were taken, among which three couples, for a total of 14 interviewees. The singular interviews were on average about 45-50 minutes long, with the interviews with couples taking about 110 minutes. They were taken in the respondents' house, to put them at east, but also to makes them better remember their daily routines. Respondents were people known by the researcher, or known via acquaintances. This has two significant downsides, the first is that the interviewer may be biased in selecting the interviewees, as well as when asking questions. For example by having preconceptions about the interviewees archetype, or level of sustainability. The researcher was and has been aware of this throughout the process, but bias can never be completely prevented. Secondly, respondents can give socially acceptable answers (Yin, 2009). This has been recognized as well, and the interviewer starts the interview acknowledging that there are multiple things the researcher doesn't do sustainably himself, with the aim of putting the interviewees at ease. Finally, the recording of the interview was discussed beforehand (and reaffirmed during the interview), and anonymity was guaranteed.

Nettleton and Green (2014, p. 249) state that "we must avoid literal readings and analysis that simply reproduce actors' accounts and instead we must pay attention to what is not said and be attuned to the interactional responses to questions or informal exchanges". Semi-structured interviews can therefore be

beneficial, as they allow leeway to ask follow up questions to respondents. Additionally, this allows for an open response and informal tone in the participants own words (Clifford, French, & Valentine, 2010). This enables the researcher to create enough structure for the responses to be compared, but also allows for discussion to go into various topics (van Thiel, 2014).

During the interview the goal was to take the approach of Rapley (Rapley & Seale, 2004), which falls somewhere between facilitative and neutral, and facilitative and self-disclosing; the interview data is jointly constructed, however, the role of the interviewer contributes to this less than the interviewee. The intention was to limit leading questions, although at times this was done by accident. This does mean that questions were somewhat open, to be interpreted by the interviewee, making it harder at times to zoom in on a specific topic or angle.

A preliminary interview guide has been made and tested in a pilot interview. This lead to a couple of changes: 1) The interview should start with easier questions; 2) The interviewer needs to pay special attention to the follow up questions, to keep them in line with the performative grounding of the practice in question; 3) The broad questions somewhat distracted from the ethnographic line of thinking, they need to be better balanced.

The eventual interview guide (appendix B) has been adjusted and brought back to three segments. The first is a short introduction, detailing the interview layout and content, as well as respondent consent to recording. The second segment is styled after a 'grand tour question', asking the interviewee(s) to describe a typical day at home (Spradley, 1979). This also added information onto the theory regarding the routine conditions (Ch. 2.3.3): which routines are sequenced, and when are they more structured (fixed and/or inter-related), or more whimsical. Additionally, follow-up questions were prepared for the mention of certain activities, such as belonging to one of the categories from chapter 2.2.2; this is done with the goal of building up important meanings and competences. These included descriptive questions like: 'what was your last dinner/product purchase?'. Included herein is also a focus on social interaction or the cooperation or monitoring of practices, as this is expected to be influential according to the theory (2.1). Finally, also included were questions to gauge how the interviewees felt regarding the level of sustainability in their discussed routines, in order to better understand their sustainable archetype. The closing third segment starts with a small summarizing recap, which is followed up by broader questions relating to the archetype analysis. This was mostly tailored to the characterization of the mentality model, but also turned out to be useful in constructing the sustainable dispositions in 4.2.

While the learning points were improved compared to the pilot interview, the time-constraints made it hard to properly focus on descriptive grand tour questions, since the added context comes at the cost of time. After a couple of interviews some questions were also added to more specifically ask information on temporal aspects as well as how important the interviewer views sustainability throughout various activities. This did mean somewhat longer interviews, but did provide more information which helped answer the research questions.

3.2.2 Validity and Reliability

On the external validity: when conducted by someone else, the research should be able to draw the same conclusions (Yin, 2011). This is facilitated by being clear and descriptive in the methodology and data collection of the research. Furthermore conclusions should do justice to the complexity of the findings, and not be oversimplifications (Denscombe, 2003). Considering the complex but small data sample, the drawn conclusions will be somewhat hesitant. While there is an interview guide which details the direction of questions asked, this functioned more as a basis, and there has been ample use of follow-up questions which give rise to deviations in data. However, conclusions are foremost based upon trends in the answers, and given that the same respondents will be questioned, the same elements can be found within their routines. The sustainable disposition is perhaps more open to interpretation of the researcher, even so the characterization and conclusions made herein are clearly explained in chapter 4.1. This somewhat mitigates the bias of the researcher, as arguments are made from data. That being said, a point of contention is always whether other researchers will find the same important trends to focus upon, and therefore the generalization remains a point of critique; however, this is also inherent to interpretative research.

The reliability, which is closely connected to the validity, is a function of the accuracy and consistency in which the variables are measured (van Thiel, 2014). This is usually a more contentious aspect of qualitative research as well, and does suffer from the same problems as has been outlined prior. Here the iterative process affects the reliability, as the interview guide and style of questions have evolved as the research progressed. The data collection between the first and last interview is therefore not exactly the same. However, the type of questions as well as the general topic have not changed, it is more so that in the latter interviews it was better understood which topics to delve into more. The earlier interviews therefore are less comprehensive, but the data that *is* acquired is still congruent with similar data from the later interviews. In that sense reliability is acceptable. However, considering the joint construction of interview data as detailed in chapter 3.3, a one-on-one replication is likely not possible. The interview guide in appendix B does give some indication as to replicating the questions to ask. But, follow-up questions are dependent on the answers of respondents, and sometimes follow-up questions were not used, making it hard to perfectly replicate the data in another interview.

Finally, consider the relationship of the researcher with respondents (either direct or via acquaintances), which may lead to socially acceptable answers. As stated, the researcher has tried to prevent this, but it cannot be ruled out.

3.2.3 Analysis (methods)

For analysis, interviews have been transcribed and loaded into Atlas.ti. There, the text has been searched for important elements (competences and meanings) related to one of the routine categories or sustainability in general (and also aspects which relate to the characterization of the mentality model, before that part of the research was changed). Thus, codes have been ordered within routine categories, sometimes with overlapping categories, or as relating to sustainability/mentality model. Additionally, other codes pertain to the reasons respondents give for doing / not doing something sustainably, or if there was context which was in some way important to the (un)sustainable performance of the routine.

Then, for each interview, the code has been made into a network, which showed relations to the mentality model on one side, and routine aspect to another. In the network, the goal was to highlight per category what reasons there are to instigate or bar sustainability in routines, leading to an overview for each interview, for easier comparison. Important trends could thus be more easily recognized and verified between respondents. Additionally, the network was used to group things related to the sustainable disposition, again for easier comparison.

4. Analysis

The analysis is divided into the two contextual perspectives, starting with the <u>routine context</u> in 4.1, and the <u>sustainable disposition</u> in 4.2.

4.1 Routine context

This chapter consists of an initial explanation of some the recognized meanings and competences (4.1.1). Then come the findings per category (4.1.2-4.1.5), followed by an answer to the first sub-question (4.1.6) and second sub-question (4.1.7).

4.1.1 Explaining some important elements

First, a description of two important sustainable meanings that were identified in the data, and which require a short description to explain what they entail. They'll be recurring in the subsequent routine specific chapters. Other elements will be added in the subsequent chapters, but they don't need as much of an explanation.

Meanings

Increased (sustainable) awareness

This resembles the higher amount of sustainable attention and awareness that respondents report to have when talking about the routine in which it is listed. It carries with it the understanding and realization of the necessity and urgency of changing towards a more sustainable society. Increased awareness is often stated as a result of societal attention and discourse on sustainability, for example the discussion on the unsustainability of meat production/consumption. One thing to note is that it's not solely a meaning per se, as it can be seen as intertwined with certain (prerequisite) competences (e.g.: what global warming is and the dangers thereof; or more specific, knowing - some of - the externalities of meat). Still, by representing a recurring incentive to sustainabilize, to live more sustainably, it is one of the most important meanings found.

Thrift

Thrift is associated with the reduction of resource usage and waste. It is often mentioned in relation to more sustainable awareness (with more awareness leading to increased attention to thrift), making it hard to distinguish them at times.

However, thrift is not always linked with climate change or sustainability per se. For example, many respondents have grown up the be thrifty in certain things: closing windows to retain heat and turning off unused lights; or just in general trying to limit resource usage and waste. There are also instances in which the recent push for sustainability hasn't impacted thrift in routines. Therefore, thrift can partially be seen as a tangential aspect to sustainability, with a focus on limiting waste or resource usage: something to strive for. Thrift also carries the notion of the unnecessary and preventable, of waste that needn't be: every respondents has at some point stated to see resource wastage as *"zonde"* (rough translation: 'a shame', something regrettable).

Some respondents mention a more specific or severe sort of thrift: an aversion to excesses. This seems more specifically related to observing, and condemning, wasteful behavior in society; and making sure to

limit their own part in it. Respondents who spoke of this use more emotive terminology, underlining their dislike or contempt for it.

4.1.2 Food

Everything food, from buying groceries, to the preparation and consumption of food. A summary of relevant data can be found in appendix A.1.

Each of the chapters 4.2.2-4.2.5 are structured the same way: first they highlight the important meanings that are relevant to the corresponding category, giving some background information; then the same with competences; and finally, a short summarizing paragraph. This is all drawn from the interview data, summaries of the interview data can be found in appendix A for each of the routine categories. It is not necessary to read these, but they do give more context and background in regards to where the meanings, competences and summaries are drawn from.

Meanings

Taste & availability

Taste is a crucial meaning for food routines. The increased availability of - tasty - vegetarian options is mentioned multiple times as contributing to a decreased meat consumption. Herein, fake-meat is contentious: some like it, others don't.

Health

Health is an important consideration for some respondents. Additionally, sometimes sustainable food adjustments come after respondents put more attention towards eating healthy.

Increased awareness

The societal attention on climate change and specifically on the unsustainability of meat has triggered many respondents to give up or lessen their meat consumption.

Thrift

Thrift plays a less significant role in this category, which contrasts with the role it has in other routines. However, there is still mention of not wanting to throw away food, and limiting water usage during cooking.

For respondent 8 and 9b the aversions of the excesses of contemporary society was an important part in their decision to eat less meat. For others this plays no role.

Costs

Costs are generally discussed negatively in the context of food routines, because products with quality marks (especially biological quality marks) are more expensive than normal products.

Convenience

Sometimes routine are or aren't adjusted sustainably out of convenience. It is sometimes mentioned specifically: 'cooking vegetarian for the whole family to prevent having to cook two meals'; but there is

also overlap with many of the previously discussed elements: for example the availability of vegetarian and biological options.

Competences

Societal discourse and attention

The societal discussion on meat has had a significant influence on the reduction of meat consumption, not only leading to increased awareness, but also better competences by highlighting the unsustainability of meat.

Sustainable routine-conversations, other sources and lack of knowledge

In general, only some respondents (two of which are vegan) seem more broadly interested and invested in information and know-how on sustainable food options. They consequently report more sources and instances of gaining new knowledge: conversations about food routines, documentaries (albeit mostly online), even festival lectures.

Comparatively, others respondents mostly mention the general societal (meat) discussions, news sources, and nice vegetarian recipes. The latter of which does contributes to sustainable know-how, but is focused on reducing meat consumption, and not so much dairy or other (un)sustainable food matters.

Quality marks offer people information on the degree of sustainability in specific products. However, there is uncertainty and distrust surrounding quality marks as well: who checks if they are correct, and wat do they even really mean anyway? Additionally, only some respondents really consider them.

Experiencing new routines and options

Expressed especially by respondents 9a and 4, there is more focus on vegetarian options in the culinary world; thereby increasing the availability of (tasty) vegetarian option. This can be linked as a side-effect of the general increase of awareness because of the societal discussion. In general it is likely to have increased the know-how of preparing and consuming vegetarian (or vegan) options. A similar example is taking inspiration from observing herb gardens, and seeing that as a possibility for their own sustainabilization.

A particular example in changing diets should be highlighted, namely: partner induced changes. A significant portion of respondents has changed diet after they got a new partner, or their existing partner changed diet. The change varies from lessening meat consumption to becoming vegetarian/vegan themselves. Additionally, in the two cases where the diet altering partner had been transitioned into an ex-partner, the new sustainable diet survived the breakup.

Interim summary

While sustainability plays a large role in food routines, it is heavily focused on reducing meat consumption. The societal attention for this has been paramount in building-up awareness and competences in that aspect. Additionally, an instigator for sustainable change is experiencing new (vegetarian) meals and diets – either through increased exposure in the culinary world, or by partners who change their diet –, as well as the availability of tasty meat substitutes. Sustainability outside of less

meat (e.g. dairy or eating local products) is much less well-known or focused upon, and therefore much less integrated; only the more sustainably minded people focus thereon

4.1.3 Washing

Routines related to washing: oneself, clothes, dishes, etc. A summary of relevant data can be found in appendix A.2.

Meanings

Increased awareness & thrift

People state to be more aware of sustainability in washing routines, in recent years. In this category this seems specifically connected to thrift: the increased awareness has led to an increased focus on thrift; even if with variable success. Thrift is mostly focused on tangible resource usage: often focusing on running water from showers or faucets. Routines that use (dish)washers seem to draw less immediate feelings of thrift or sustainable awareness.

Hygiene and freshness/cleanliness

Hygiene is important in washing routines. This affects the frequency of washing instances, for example showering after sports; but also the how: sports clothes often get their own separate washing cycle, leading to half-filled machines. Some respondents also like to shower as part of a wake-up routine, while this was initially noted as part of hygiene there may also be an element of freshness or cleanliness somewhat distinct from hygiene. Two examples: R.9a, on washing routines *"Our family likes detergent scents"*; and R.2, on using a dryer instead of hanging laundry – although not a reason for initial change: *"I find the laundry a lot fresher and softer this way"*. This shows there is an element which is related to hygiene but also distinct from it. Because the idea of freshness or cleanliness is considered during the later stages of analysis, it has not been a topic of enquiry within the interviews and cannot be confirmed.

Relaxation/comfort

Many respondents mention to shower to relax or for comfort. This competes with wanting to reduce shower time, which often fails as a result of the importance of this meaning to the routine enaction.

Costs

Costs are mentioned as an incentive to be thrifty, but especially by those who pay a lot of attention to money anyway. For others, the costs don't seem to be high enough to have a similar effect. Costs can also be used as a way to gauge how much water is used up (linking it to competences), although the respondent who did so remarked how little it costs.

Competences

Lack of sustainable routine-conversations

There are little conversations about washing routines outside of the household, and sometimes even within the household; on the topic of washing cycles within a 2 person household: *"this interview is so*

insightful!". This lack of competence sharing makes it hard to exchange sustainable knowledge and know-how related to sustainable washing.

Lack of specific knowledge

It seems as if there is little knowledge or feedback about how much resources are used during washing, making it hard to value current or changed routines. Additionally, some respondents are doubtful about eco-settings, or simply don't know whether they have them at all.

There is only one example of a respondent looking up information on washing routines, which seemed to have mostly financial motives.

Interim summary

When showering, many respondents either mention that they have decreased their shower duration or frequency, or that they don't shower that long to begin with. For this they cite more sustainable awareness and thrift. Those who do not reduce their (long) shower times usually cite health reasons, or because they use it to relax. Another thing to note is that respondents seem more cognizant of the resources used during showers or whenever there is running water, than when using (dish)washers for example.

As for competences, washing routines are among the most lacking. Routines are rarely enacted or talked about outside of the household, sometimes not even within the household. Additionally there is little to no feedback on how much water or electricity is used during a routine (or at all, for water), nor do respondents really look for information either.

4.1.4 Energy

All routines which use energy, excluding those which are used solely for washing. For example: heaters, lighting, and electrical devices and appliances such as refrigerators and laptops. This category is specifically about using them, not buying them; that will be part of the next category. A summary of relevant data can be found in appendix A.3.

Meanings

Thrift & increased awareness

Important meanings are thrift, and linked to this, increased sustainable awareness. All respondents state to be more mindful of energy usage in their daily routines. Mentioned like this are especially lights and heat insulation.

Costs

Similar to washing routines, costs are a positive factor during routines in which resources are used, but mostly only for those who have limited finances anyway. Costs are also a way to make energy usage more tangible: respondent 4 and 7 state to pay more attention since knowing the costs. Finally, costs can provide incentive for specific routines, such as using electricity at night when peak usage is low. Linked to

this is then also how respondents rent: do they rent inclusive, and is there an option for cheaper night power.

Competences

Lack of specific knowledge

Respondents have little idea of the energy usage of various routines and devices. They use monthly bills and energy usage comparison to gauge their energy usage, but it is insufficient to identify the energy usage of specific routines. While this doesn't prevent them from trying to be more thrifty in general, it does make it hard to identify energy intensive routines. Consequently, this limits sustainability within many energy routines. Only respondents 10a&b have a grasp of the energy usage of their routines, thanks to owning a smart meter.

Costs

Costs were already mentioned as belonging to meanings, since it can provide incentive to be thrifty, or make energy usage more tangible. But the latter also hints at a competence aspect: the price of the energy bill makes clear how much energy is used. It can be a form of feedback. Similarly, monthly energy usage reports (often including comparisons with similar households) are also provided by energy suppliers, and read by most respondents.

There are limits in how insightful costs are, especially the monthly occurrence is too little to pinpoint certain routines as costing too much energy. Additionally, the effect of costs is somewhat related to the size of the sum that has to be paid: big payments are noticed quickly, while smaller increments are often overlooked.

Lack of sustainable routine-conversations

The only mentions of sustainable conversation about this routine category are between the same household occupants, there isn't much mention of discussing energy routines with occupants of other households. This limits the uptake of new sustainable knowledge. Even with inner-household conversations there isn't always a fruitful exchange of ideas however, as has been mentioned especially by respondent 2.

Interim summary

A lack of competences (feedback & information) and competence sources means that it's hard to sustainabilize energy routines. Energy routines aren't really talked about outside of the household, nor do respondents know which ones are really that energy intensive.

One source of feedback are the monthly reports from the energy supplier, both bills and comparisons with other similar households. However, this information is too generic to pinpoint which routines are done sustainably or not. Conversely, the respondents with a smart meter were much more knowledgeable on what routines cost what; being able to say exactly which routines lead to spikes in energy usage.
The routines that do see improvement are generally more visible/tangible: lamp-light, or the closing of open windows/doors to contain heat. These can be related to more thrift and sustainable awareness. An aspect herein is also that respondents note to have learned to pay attention to these things when growing up, so it is not as much of an adjustment, but rather being more aware and diligent in the same routine enactment.

4.1.5 Products

The act of purchasing new (non-food) products and devices. A summary of relevant data can be found in appendix A.4.

Meanings

Sustainable awareness (not as important)

Contrarily to past categories, increased sustainable awareness was not *as* important an aspect in this category. While some respondents note to pay more attention to energy labels, and others pay more attention to thrift, for many there was otherwise little mention of sustainable awareness.

Thrift: quality & longevity or frugality

Thrift is apparent in this category in multiple ways. Some thrifty elements are ingrained in routines for a long time: some respondents just don't buy that much, and/or they go for longevity through quality rather than cheap prices. Only for one respondent does the prior (buying less) seem specifically connected to more recent sustainable awareness, others were already occupied with these things before sustainability became an important concept.

However, there are also instance of thrift which seem connected to increased sustainable awareness, such as paying more attention to energy labels, buying second hand clothes, or for some: the realization how much disposable products they use and throw away.

Interesting herein is also that respondents prefer to use a device for its full lifetime, and consider that the more sustainable way. This can be linked to a lack of knowledge, since for some devices – such as refrigerators – the energy usage and costs are sometimes higher when sticking to old appliances (Essent, n.d.).

Costs

Costs are a barrier to sustainability in this category: sustainable options are more (or *too*) expensive; or because some respondents focus on getting cheap devices without considering sustainability through longevity and/or power usage. The latter can be done for financial reasons, but also because it is seen as a good deal to be able to buy a product for cheap. For others costs are much less of a barrier.

Competences

Sustainable routine-conversations

Sustainable conversations help to broaden the application of sustainability in routines (such as in clothes), but they seem most apparent for those who are engaged with sustainability. One thing to note

is that some respondents do state to talk about sustainability with others on this topic, but because their friends aren't at all occupied with sustainability it doesn't lead to new competences.

Doing research vs buying what is cheapest

A number of respondents mention to do (extensive) research, although the focus is usually on price and/or quality; sustainability is not really stated as a factor unless through longevity/quality. Conversely, other respondents just go to a store and buy the cheapest option available.

Interim summary

It's hard to pinpoint sustainable trends or aspects within product routines. For example there're multiple ways to express sustainability when buying products: paying attention to energy labels, going for longevity through quality, second hand products, or just don't buy much at all. These indicate thrift, but in about half the cases this is an older routine (not connected to recent sustainabilization efforts).

There's also a divide between those who do extensive research, to get the best quality or price, and those who go to a nearby store and buy one of the available and often cheapest options (although the type of product may influence this, which hasn't been taken into account). Costs matter for those who have less financial resources, although some others just inherently like to get the best/cheapest deals.

On competences, it seems to be mostly those who are very involved with sustainability who learn new competences; at least partially because they talk with people who have sustainable competences to share. Others may talk about sustainability in products as well, but they have less to learn from those they interact with. Ultimately, there is a lack of sustainable knowledge, although things like energy labels seem to help and give direction.

4.1.6 Findings: answering the first sub-question

This chapter summarizes and analyzes the preceding chapters, and so answers the first sub-question: 'What are important meanings and competences related to sustainability within routines, how are they introduced, and how do they influence the uptake of sustainability in everyday household routines?'. First will be addressed three general points present in all routines, regarding: societal discussion and attention; a lack of competences; and the focus on observable and tangible resource usage. Then, some routine specific findings are presented, beginning with food, then washing, and product routines. This exempts energy routines in the latter part because there is no additional important data not covered in the first three general points.

Societal attention and discourse

The prevalence of sustainability and climate change in society, for example through discussions on television, newspapers and magazines, significantly propagates a general sustainable awareness and increased individual focus thereon: all respondents state to be more occupied with sustainability on both an individual level, such as during daily routines, as well as on a societal scale. Societal attention for sustainability and climate change so gives important meaning to sustainability in routines. While the societal discussions have likely supplemented competences as well (e.g. relating to understanding and recognizing the harmful effects of climate change and corresponding causes and solutions), the addition of routine specific sustainable competences have been sparse at best. One exception is the consumption

of meat in food routines. Here, societal discussions *have* been very successful, because the unsustainability of meat has been a large topic in societal discussions itself. However, this does not extent towards other unsustainable aspects in food practices, such as eating cheese (which is more unsustainable than many meats: Carrington, 2018) or eating local products; this will be further expanded upon in the food specific paragraphs.

Competences or the lack thereof

In the theory it was mentioned that competences are important constituents of routines (chapter 2.1), and this is underlined by the interview data. Respondents often remark not knowing how to sustainabilize further, or what else to do. For many routines, especially energy and washing routines, there is thus a lack of competences, making it hard to identify unsustainable aspects much less change them. Competences here can represent a lack of knowledge and feedback: which routines cost a lot of energy, water or other resources? While there are monthly bills and energy usage & comparison overviews, they are a monthly occurrence. Relating those moments of feedback to hundreds of routine enactions over the period of a month makes it hard to pinpoint what resources a specific routine uses, or what sustainable effect routine changes have. Furthermore, it also likely makes for a very detached and intangible feedback moment in regards to resource usage. After all, when learning or trying to improve oneself it is important to be able to connect feedback to specific moments in routines, which is generally not helped by having those moments of feedback a *month* later (compare it with learning for school, a sport, or instrument).

This is all part of the modes of monitoring as discussed by Shove et al. (2012, p.111) in chapter 2.1.4: "*it provides practitioners with feedback on the outcomes and qualities of past performances. To the extent that this feeds forward into what they do next*". Conversely, the one couple who had a smart meter stated to be significantly more aware of what routines cost: thereby seemingly making resource usage more visualized. They even commented on it being a sport to get their usage lower than that of others. This is in contrast with other respondents, who generally state not to know how to lower energy usage. That being said, the positive effect of smart meters is contentious, especially in large scale experiments (Naus, 2017; Vringer and Dassen, 2016; Gram-Hanssen, 2010).

An important aspect in acquiring new competences is social interaction (chapter 2.1.4): enacting routines together (which can be related to *mediation*, a mode of monitoring), or having conversations about routines and sustainability is a way to supplement sustainable competences. It adds knowledge or different forms of know-how: for example by learning how to perform a routine in a more sustainable way without compromising the core 'essence' of the routine. One important such source comes from partners: many respondents state that they changed their behavior to be more sustainable, for example paying attention to water usage or electricity usage. However, this is only a single competence source, and the other side (the partner's behavior) is often less improved in such a relationship.

More and other social interaction is therefore important, such friends, neighbors and family. But not every social environment is equally competent or informative in sustainable routines (more on this in 4.2). Additionally, interest is important as it drives routine co-operation and conversation, as well as routine change: it allows for more attention and focus on routines, thereby not only coming across and

learning new competences more quickly, but also allowing for more reflection and change of the routine. As we will shortly see, this does happen somewhat for food routines, which do indeed see a combination of interest in the routine itself as well as the addition of sustainability to the routine. However, other daily routines do not seem to be particularly interesting to most respondents, and so, they are not often discussed outside the household (and even within food, the focus is mostly on consuming less meat/more vegetarian). This severely limits the uptake of new competences and bars sustainable routine adjustments.

In general, it can be said that the lack of sustainable competences is two-fold: there is a lack of knowledge and feedback, making identification of unsustainable routines hard; and, there is a lack of social interaction in many routines, especially those relating to washing, energy and products, making it hard to learn more sustainable routine renditions.

Observable and tangible resource usage

Even though competences for most routines are lacking, there are still differences in sustainable effort between routines. A large difference can be attributed to the tangibility of resource usage. Tangibility or observability is important in getting a 'feel' for how much resources are spent/wasted: running water, lights, throwing away food or products. For example, to respondents showering is more connected to (un)sustainability than using a (dish)washer. These more obvious moments of resource usage provoke feelings of thrift: the dislike of wasted resources. While sustainable awareness has led to more general focus and urgency on sustainability, and gives reason to be more thrifty in the first place; it is the observing of ('unnecessary') waste which seems to trigger many respondents into sustainable action or change. Consequently, routines with tangible resource usage/wastage generally see more sustainabilization efforts than others. This is regardless of routine category: throwing away food, running water, lights or throwing away products; these can all evoke feelings of thrift in respondents.

But paying attention to thrift is not present equally: some respondents mention that it is only due to their partner that they even consider the resources wasted when letting water or appliances run without use. Other respondents note that being thrifty comes from their upbringing; it is an acquired meaning/competence. Thrift as something to strive for has been noted as a meaning, but recognizing moments of wastage and the application of thrift are a competence; an example is recognizing that open doors and windows lead to heat diffusion. Additionally, observing resource usage can be influenced. For example, the separation of plastic waste (rather than throwing everything in the same garbage can) has made R.9a&b increasingly aware of their plastic usage in general, as well as how much disposable plastic their old coffee-machine required. Additionally, although it has not been stated by them, the translucent plastic bags in which plastic is gathered may help tangibility as well.

Already shortly touched upon when discussing the lack of competences, financial costs can be similarly used to gauge resource usage. However, there are various aspects which influence how effective this is: 1) respondents who pay more attention to costs in general (e.g. as a consequence of financial stability), pay more attention to costs of resource usage; 2) one respondent notes that a big end of year sum affected his behavior significantly whereas smaller monthly payments never had; 3) that low costs can also incite wasteful behavior (e.g. when realizing that the water used in a 1-hour shower doesn't actually

cost that much). However, the largest drawback in using costs as a gauge for sustainability seems to relate to their monthly occurrence, as discussed prior.

Food

In food routines, the reduction of meat consumption is almost universal among respondents. The societal attention for the unsustainability of meat has greatly helped herein. Other important aspect are convenience, availability and taste (which is a core meaning in food routines): there are more tasty vegetarian options. This is apparent in multiple ways: more, better and cheaper fake meat; more and better vegetarian options in restaurants. The latter also comes – according to respondents – with a change in cooking culture, with more focus on vegetarian recipes, thereby supplementing sustainable know-how (e.g. the preparation of vegetarian dishes in cooking books or on television). Notably, these respondents (R.4 and R.9a) also mention that they much prefer the focus on tasty vegetarian recipes, rather than a focus on limiting their meat consumption. This may indicate that for routine change it is better to do something *instead*, rather than *not at all*. While it's not verifiable in other routines, it surely adds more positive meanings to a routine when you are focusing on learning tasty vegetarian recipes, rather than focusing on not being able to eat meat. A caveat may be that acquiring new competences is only a significant positive aspect if the routine itself is interesting (e.g. liking to cook, or indeed liking to sustainabilize).

Aside from better vegetarian options, it is interesting that some respondents report more focus on a sustainable diet after starting to focus on eating healthy. This may partially be attributed to the fact that meat, aside from being unsustainable, is also increasingly linked with being unhealthy; and with a similar societal discussion to go along with it. Some examples from newspapers (translated from Dutch): de Volkskrant, 'WHO: processed meat can cause cancer' (Speksnijder, 2015), 'Government, do something! It's high time for a sugar and meat tax' (Boersma & Theule, 2018); NRC (Köhler, 2017), 'how dangerous is sausage'. And so, reducing meat consumption fits both in a healthy as well as sustainable food-routine, thus indicating some elemental overlap. Moreover, learning to pay attention to health in food routines may make it more obvious (or 'easy') to pay attention to sustainability in food as well; and so, the linking of sustainability and health seems then a good way to incentivize sustainable behavior, at least for food. However, it should not be forgotten that both have had a societal discussion to push awareness and consequent competences as well – something which most routines do not have.

Following this, it may be posited that in general it may be easier to implement (sustainable) routine changes when a routine is already subject to change; this has been discussed before, for example the change of spatial context by moving house discussed in 2.3.2. This is seen as well by the large number of respondents who changed their diet after they got a new partner with a different diet, or their existing partner changed diet; be it a reduction of their meat consumption or 'going vegan'. This hints at being forced outside of the familiarity of the known routine, and getting acquainted with a new routine performance.

One final thing about food routines, is that they are (for all but a select view: the Sustainable Proponents archetype from chapter 4.2.3) mostly centered around cutting back on meat. With the previous

paragraphs, we can now contextualize and hypothesize why other foods, like cheese, are much less focused upon. The first is that there has been much less of a social discussion on the unsustainability of cheese, dairy or other food aspects, and thus a lesser awareness and competence build-up. This is somewhat hard to prove, but can be seen in the data of respondents, where really only the more sustainably minded respondents acknowledge the unsustainability of cheese and dairy. The second is that dairy does not carry similar unhealthy connotations as meat. There has been less of an obvious social discussion on the downsides of dairy and cheese; rather, it is promoted by Voedingscentrum (institute on food subsidized by the Dutch government) in the Dutch food pyramid 'Schijf van vijf' as belonging to a healthy diet (for meat it is only lean unprocessed meat which makes the Schijf van vijf).

It can also be hypothesized that a third reason is that there are less obvious dairy and cheese substitutes, and that it is therefore not as easy to replace or cut back on. While there are alternatives available in supermarkets, be it through various nut milks or vegan cheeses, it is uncertain whether they are perceived as worthy dairy replacements. Still, when looking at the interview data, it seems that it is especially the awareness and competences which are lacking; no-one even mentions it outside of the select few.

Washing

Like taste is important in food routines, washing has two distinct important meanings as well. For washing routines in general, *hygiene* is important, and for showering, *comfort/relaxation* is also added. When looking to sustainabilize washing routines, these should always be kept in mind. Especially for showering routines, both make it hard for respondents to change to a more sustainable routine performance, even if they have the desire to; reducing shower times inevitably hits either hygiene or comfort/relaxation too much. That being said, not all respondents have the same requirements herein: some are fine with five-minute showers, whereas others need longer to properly include both meanings.

Finally, one respondent (R.9a) has also described a washing meaning which may be described as freshness or cleanliness. This may be similar to hygiene, although perhaps not as important or rigid, seeing that R.9a mentions to have reduced their families' towel washing routine regardless. Because this was only explicitly mentioned in one of the latter interviews, this has not been further explored.

Products

It has already been mentioned that thrift is apparent in this routine category when throwing away old products and replacing them; especially so when those products are still working. Aside from that, respondents can be frugal in their purchases, only buying what they need. Some respondents also go for quality products, seeing them as more sustainable because of a longer lifetime. However, not all respondents think of it that way. Even some of the more sustainably minded respondents state to not really consider the longevity and quality specifically, rather they focus on price.

Additionally, thrift can have a downside as well: respondents don't like throwing away working products, for thrifty reasons, which may prove to use up more resources in the long run. Also, thrift can be connected to low costs or 'good deals', which can impede sustainability.

4.1.7 Findings: answering the second sub-question

With the first sub-questions answered the routine context can be completed by adding also the routine conditions, and thereby answering the second sub-question: 'How do temporal and spatial conditions influence the uptake of sustainability in everyday routines?'. First discussed will be two general points, namely: co-participation & social interaction; and a change of routine conditions. Then, in order: washing conditions; food & products conditions; and energy conditions.

Co-participation and social interaction

In the theory, five temporal dimensions have been highlighted: *duration, sequencing, periodicity, tempo* and *synchronization*. An important note herein was that co-participation of practices is a 'fixed practice', requiring a comparatively high degree of coordination and arrangement. We have seen in prior analysis that some routines (mostly food routines) see a lot more co-participation – and thus social interaction – than others, leading to a quicker uptake in sustainable competences. Especially washing routines are barely discussed outside the household, they are often enacted alone and spatially separated, thereby sometimes even limiting social routine interactions within the same household. Energy routines also see little discussion: while they may not necessarily be conducted in a room where guests won't come, they may not be conducted *when* guests are around. After all, as was discussed in the theory, co-participation of practices is a fixed practice: time intensive and regulated; it apparently does not involve many daily routines like household tasks.

Conversely, food-practices are more often co-participated and thus discussed. However, because they garner more interest, they are discussed outside of their enactment as well. So while co-participation probably plays a significant role in routine change, it is not necessarily a prerequisite: it helps if a routine is part of an interest as well.

Change of routine conditions

As was discussed in the theory, moving house influences routine enactments: it necessitates a different routine enaction, and therefore reflection, giving opportunity for sustainable change. It is perhaps not *the* reason for a routine change, but it can be the initiator for reflection that leads to change: R.6 changing her shower duration, R.8 reducing meat consumption, R.1 grocery shopping routines etc. There even seems to be reflection in anticipation of a move: R.6 was already considering her shower routine before moving; R.9a&b have sustainable aspirations in case of future moving, although they are therein focused on financial investments; and in general, multiple respondents claim to want to look at solar panels when moving house.

Finally, from the theory, it is underlined that time is a scarce resource. Although obvious, it is good to note once more that any sustainabilization effort is under time pressure: a sustainable routine which takes longer is immediately suspect to failure. That being said, some respondents show the two can be combined as well (some examples in the next paragraph).

Washing conditions

Especially for washing routines the temporal partitioning leads to more insight. For showering, an important meaning for many respondents is relaxation/comfort. This can be seen as putting a minimum

on the *duration* of the shower, or similarly, a limit on its *tempo*. It has been hard for those respondents to adjust to more sustainable routines; at least as long as they target the routine in those aspects. Even the more sustainably inclined respondents had a tough time decreasing her own shower duration. It may prove more fruitful to look at routine changes which don't target those aspects (for example: water-saving shower heads or colder water, although that may interfere with relaxation as well).

Another aspect of washing routines (e.g. showering) is that it is often *sequenced*: for example, after sports, or as part of a wake-up routine; thereby also implying *periodicity*. These routines may be hard to adjust in respect to their frequency, because they are connected herein to hygiene expectations.

Finally, there's examples of *synchronization* in washing routines which may be both a barrier or benefit to sustainability: hanging clothes when the shower is running (for example while waiting for the water to heat up) is an example of unsustainable synchronization, whereas brushing teeth while showering may be a sustainable example. Both examples are from the data, indicating that synchronization is something which can potentially be optimized. But again: considering shower routines have little social interaction, such competences are rarely exchanged.

Finally, the *duration* of (dish)washing machines can be mentioned: R.6 has remarked that she thought eco-setting may be less sustainable because of their increased *duration*. *Duration* thus influences the perception of resource usage, even if the routine uses resources less tangibly.

Food and products conditions

For the purchase of products and food items it is often convenience or *duration* which seems to decide which store option is chosen: R.7&8 go to a nearby store and buy the cheapest available option; R.2 uses a car to save time and because he has to do grocery shopping for the family; R.6 &R.9 often buy groceries after work, and would rather go to one store. The available options are therefore contained within a certain spatial proximity; and as the latter example shows, *sequencing* can be important for grocery shopping.

In food practices, the meat reduction has been talked about frequently. A change of *periodicity* (eating meat less often) has proven to be successful because taste of vegetarian recipes was good enough for most respondents. Additionally, the discussion on the detrimental health aspects of meat has also targeted the amount of meat consumed. It is therefore perhaps not surprising that this has been one of the more successful routine changes, for a reduced frequency targets both health and unsustainability. That being said, it is not the only way to eat less meat: smaller portions are also mentioned by some respondents. Perhaps that can be a viable option for those who do not find vegetarian food sufficiently tasty.

Energy conditions

For energy routines the routine context mostly considers the house itself: for example an old house versus a newer and better insulated house. Similarly, a larger house with larger rooms requires more energy to heat. Without changing house or significant investments, this is hard to change. It is also often pointed out as being the cause of doing worse (or not as well as they want) when comparing energy

usage to other similar households, thereby also giving respondents a reason not to look into sustainabilization of routines further.

4.2 Sustainable dispositions

Analysing the interviews brought up various different dispositions related to sustainability. This has been gathered into three sustainable dispositions, represented as ideal-type archetypes. 4.2.1 starts with the Sustainable Detached, the least sustainable of the three archetypes. 4.2.2 introduces the Sustainable Conformer, who adjust their level of sustainability based on what they perceive can be normatively expected from them. And finally, in 4.2.3 the Sustainable Proponent; those who are invested in sustainability and see it as an idealistic goal. In the last chapter, 4.2.4, the third sub-question will be answered.

The archetypes are constructed via competences and meanings, to fit with the theoretical lens of the research. These are displayed on the left of tables that are present in each chapter, and will be shortly grounded in subsequent paragraphs. The right of the table delineates the implications these have for sustainable routine adjustments, and when those are more or less likely.

4.2.1 The Sustainable Detached

The Sustainable Detached acknowledge the danger of climate change and the necessity of a sustainable society. However, this is more of a detached knowledge rather than a realization prompting immediate action. The sustainable detached do try to limit the unsustainability in their actions, but they have trouble implementing a focused and rigorous change of their routines. Perhaps they questions the usefulness of their actions, considering their perceived futility on an individual ('what can one person do') or global scale ('what can one small country do'). Or, they may just find themselves not caring enough: the implications of climate change are often only felt conceptually, rather than physically.

Table 1: Sustainable Detached (SD)		
Examples: Respondents 2, 3b and 4 display many SD characteristics – with the citation that respondent		
10b seemed to be sustainably detached before meeting his partner 10a.		
Meaning related characteristics	Sustainability more likely when:	
Low inherent sustainable interest or	It's easy or convenient	
drive.	green energy when given the choice; eating vegetarian	
Little excitement for sustainable	because it's readily available, etc.	
changes / less sustainable hype	Coincides significantly with other topics of interest, wants or	
	needs	
Less focus & purposivity on	Reoccurring or continuous exposure (through partner, or via	
(sustainable) routine enactments.	societal discussions)	
Forgetting about sustainability during		
routines, not in forefront of mind.		
Sustainability mostly impulsive and		
irregular		
Sustainable detachedness		
Futility of individual effort may be a		

root cause	
Competence related characteristics	Unlikely when:
Few social sustainable competence	Takes effort & focus, or goes against wants or needs
sources	There is no benefit other than sustainability (whether
Few sustainable competences & low	structural or financial, or just convenience)
uptake	
Because of low interest and focus	

Table 1 shows the sustainable disposition of the detached. While they generally consider sustainability as important, they have no inherent interest in the topic itself. Respondent 2 *'tends to skip'* sustainable topics in the newspaper, and while he may converse with a friend about sustainability, it's *'more to show engagement than it is to learn sustainable tips'*. Attached to this is less (sustainable) purposivity, from the same respondent, on a possible investment in solar panels or energy efficient products: *'I care too little to really invest time and attention into it. I think: it will come later'*. Similar too, for respondent 4 who often realized he forgot to turn off the lights, but didn't want to get out of bed for it. Or respondent 3b, who doesn't really reflect on resource usage of running water or electrical devices.

These respondents also state that they feel futility or uselessness in sustainable action. Especially as an individual, but to an extent also as a citizens of the Netherlands when compared to countries like China (with the implication that China pollutes much more). As respondent 3b states, when asked about the usefulness of his sustainable action on a global scale: *'I'm convinced you have to put energy into it* ['it' refers to sustainability], and to try your best. But I'm also pessimistic, as long as there is no global tackling of the problem, I do have very big questions regarding that.'.

The Detached have little sustainable competence sources. Looking at respondent 4 once more, when asked how much he talks to his friends about sustainability: *'a little .. there are some examples. But, to have a meaningful conversation you have to know something about the subject. And not be close minded .. and my friends... They'll say: aaah we'll be long dead by then. That's how such a conversation goes'.* Ultimately, there aren't many which whom he will discusses sustainability, except for his partner, who he states to have incentivized sustainable adjustments for him. And similarly with respondent 2 and 3b, who may be exposed to sustainable information through the newspaper or a friend, but who just don't really take up that information as a competence to do something with.

What (partially) offsets this 'detachedness', are – unsurprisingly – their own interests, wants and needs. For respondent 4, eating less meat is linked with a readily available supply of non-meat options, because of a pescatarian partner and not having to go to the store. He also bought timed plugs, in order to help with remembering to shut of the lights. This can be seen in relation to him liking to buy gadgets and 'things'. Similarly for respondent 2, who eats a lot less meat because it takes effort to cook both with and without meat for one meal. He also names multiple sustainable aspects in his routine which coincide with saving time, such as filling the kettle or pans with less water and brushing his teeth in the shower.

Another factor is reoccurring exposure or steering to sustainable competences or routines. Respondents 2, 3b, and 4 all state that their partner steers them towards sustainable behavior, although in varying

amounts. Another such example is the recurrent societal discussion on the unsustainability of meat, which has influenced many respondents to reconsider sustainability.

Naturally, both reoccurring exposure and sustainability coinciding with interests, wants and needs, are apparent in the other archetypes as well. But for the Detached it is especially important, as they have a hard time putting effort into sustainable action solely for sustainable reasons; whereas the other two archetypes will do better even without those aspects.

4.2.2 The Sustainable Conformer

The sustainable conformer seeks to fulfill their part in transferring to a sustainable society and combatting climate change. Their inherent interest in sustainability is limited, however. While they may be interested and invest in certain sustainable aspects that align with other interests, it is less of a focus during their daily routines. They focus on the more commonly known unsustainable aspects in routines and the ways to prevent them: less meat, green energy, etc. They gauge their own sustainable efforts by comparing with others in their social group, or the average Dutch citizen, and are content with an average sustainable 'performance'.

Table 2: Sustainable Conformer (SC)			
Examples: Respondents 1, 9a, 9b, 10a, 10b* display mostly SC characteristics; with respondent 3a			
seemingly willing to be sustainable as a proponent, but perhaps missing the drive to or sustainable			
competence sources to follow up on it.			
*likely coming from a Sustainable Detached position			
Meaning related characteristics	Sustainability when:		
Reasonably committed to sustainability: to be taken	Coincides with interests, needs or wants; or		
seriously, but within reason/moderation.	when its easy		
Interested in sustainability as a solution to climate	Normative: when apparent in others around		
change, but perhaps not so much as topic itself.	them or society in general		
More of an obligation than interest.			
Normative sustainable goals: not a frontrunner /	Latching onto sustainable action of others		
leader, but no straggler either.	Going along with others		
Comparing with others in social groups or the			
average			
Competence related characteristics	Unlikely when:		
Normative sustainable competences or when	Uncommon sustainable action without other		
aligning with personal interests.	benefits		
	no frontrunner		
Sustainability as a possible general talking point, like	Significant barriers: takes effort, or goes against		
other current events. Less so for specific routines.	wants or needs		

The Sustainable Conformer is more committed to sustainability than the Detached. Perhaps a root cause for this is that they are less inclined to think about the usefulness of their actions on a global scale. They do not really consider the usefulness or futility of their sustainable actions: respondent 3a feels their sustainable efforts *'are useful'*; R. 9a: *'I don't think like that'*; R.10a *'I think it's more that I can justify my*

own actions towards myself'; R.10b: 'it [his actions] is not that influential, no, but if everyone thinks like that...'.

However, while they want and do commit to sustainability, they do not feel the need to be at the front of the pack: R9b: 'I think about the environment more, it's important of course... and I'm not a front runner, but I pay more attention to it'. This is also what relates to the normative aspect: R.10a 'I compare with others, via the monthly reports from the Nuon [energy supplier], and as long as we're around the average I'm fine.'; responding to this, R.10b: 'It doesn't really motivate to take the next step... it's fine like this'.

And similarly, the sentiment of doing a lot already, or not knowing what more to do: R.9b:'compared with other comparable households we're higher in [energy] usage ... but why that is, I don't know'; R.9a: 'I don't think we're unnecessarily wasteful'; R.3a 'on the other hand, we already do so much'; 9.10a 'I don't see what else we can do in our housekeeping'. This is not necessarily exclusive to the conformer, but whereas the Detached may lack sustainable action because of a lack of focus, for the Conformer it may be more related to a lack of competences. However, a lack of competences can result from a lack of sustainable interest and effort as well: the Sustainable Proponents do not have a complete set of sustainable competences either, but do manage to be more sustainably involved.

However, when sustainability overlaps with an interest, this can change: R.1 states to not really talk about sustainability a lot, but later does name several household related items which she would like to have: a groundwater pump in the garden, or rainwater collector, both ideas seen at her family in-law; and although it has been discarded, the possibility of making their own furniture instead of buying it from a store, like a friend has done. Herein, the sustainable aspect is seen as attractive.

On the other hand, when it goes against interests, wants or needs, as might be expected, there's less incentive to be sustainable: R.9b: 'I love cars, so that's something in which I'm not so sustainable', and, 'We've never taken the initiative to put those things [solar panels] on the roof ... mostly because I find them hideous'. Although it's also possible to find a balance: R.9b: 'We do have a swimming pool of 1600 liter in the backyard. Maybe it's selfish, but it's 40 degrees, and we can't go on holiday either, so I'm getting a pool.'10b: 'But we did talk with friends, how best to do it, with a pump so we only have to fill it once.'10a: 'And to justify it to ourselves, it's a relatively small pool, compared with our friends..'

Of course, as said before, aligning interests with sustainability is positive for all individuals. But the difference is that the proponent already is more willing to act sustainably (as we will see shortly), seeing as sustainability is an inherent interest itself; the added interest of the topic may help, but is less necessary. And for the detached, the sustainable aspect adds less to motivation than for the Conformer, they more or less require additional benefits.

Finally, for the conformer, sustainability is perhaps still more of an obligation, when compared with the proponent. R.10b – although in the context of them joking: '*Vegetarian day today, no meat again..'* and later: '*There's peaks and valleys, one week more than the next*'.

4.2.3 The Sustainable Proponent

The sustainable proponent is focused on sustainability, seeing it as an ideal in life: something to work towards, a form of self-actualization. They take greater interest in sustainability, seeing it as its own interest rather than a supplementary benefit for other interests. They talk more sustainability with others, and are willing to put effort into doing their own research. Generally they can be considered to have a broader knowledge and application of sustainability, looking to limit the unsustainable impact across various daily routines. Consequently, they can identify unsustainable actions more effectively than others, and have the focus and drive to change.

Table 3: Sustainable Proponent (SP)			
Examples: Respondents 5, 6, 7, 11 display mostly SP characteristics. With 3a as honorable mention:			
willing to act sustainably, but perhaps lacking the competences to apply it as broadly as the others do.			
Meanings related characteristics	Sustainability when:		
Inherent sustainable interest or drive	Easily engaged by sustainable causes/movements,		
Sustainability as its own real interest	or tagging along with friends		
Sustainability as ideal or goal: something to work	Broader sustainable competences lead to a		
towards / keep in mind	broader application thereof		
Less of an obligation, more like self-actualization	Sustainability outside of the normative or		
More diligent/alert: sustainability more often as	commonly seen ways to sustainabilize		
focus or underlying thought in routine enactions			
Competence related characteristics	Unlikely when (the usual suspects):		
More sustainable competences and uptake thereof	Take a lot of effort		
Sustainability more often as normal regular talking	Goes significantly against wants/needs		
point, leading to more exposure and further			
competence uptake			
A broader sustainable focus/application	When it's hard to identify the problem or solutions		
More likely to do own research, just for the sake of	For example: the lack of sustainable feedback in		
sustainability	many daily routines		

The sustainable proponent has sustainability as an interest, resulting in more dedication and focus towards sustainability; 'wanting to do their best'. They often express it as an idealistic interest: R.7, '*I* aspire sustainability, a self-sufficient house, an own garden'; R.5 who has always strived to be in touch with nature; and three of them eating vegetarian or vegan. In that sense sustainabilization is something to work towards, to become better at: a form of self-actualization. They will more often earnestly consider sustainable changes even when it requires significant personal effort. Comparing for example with the Conformer, who may be more inclined to see sustainability as an obligation, the Proponent may have an easier time following through with it. Some Proponents may display similar futility as the Detached express (in regards to the usefulness of their actions on climate change and a sustainable future), but are still heavily involved with sustainable action, citing that even though it may feel futile, they do not want to be hypocrites. Perhaps it is their idealistic nature that offsets feelings of futility or any detachedness.

Because sustainability itself is an interest for them, they talk about it more frequently with acquaintances, are more willing to do their own research, and in general enjoy acquiring new sustainable knowledge. For example, respondent 5 who's life and social contacts are occupied with nature and sustainability in general, R.6 and R.7 who both state to sometimes do their own research, but like learning (sustainability) from lectures as well, or R.11, who takes a very proactive stance, organizing sustainable investment options for people in his street (electric car, water boiler, green roofs), together with his neighbor.

In general, this results in more holistic sustainable competences and a broader application thereof, going beyond reducing meat intake and energy usage (although, as will be seen later, social interactions are still important). For example, they are more likely to buy second hand clothes, switch to sustainable service providers, or attempt to grow their own food. This is not exclusive to them, but it more likely that they are exposed to such competences, and take the effort to integrate it in their routines.

Naturally, the proponents have their limitations as well: they do not research everything themselves, nor do they only talk about sustainability; their competences aren't complete. And there may be cases in which their sustainable ambitions are limited: R.5 has to eat more dairy then she would like, because of health issues; another example with more agency, R.7, who states to sometimes make unsustainable choices out of convenience, such as taking the car over the bike; or R.6, who eats meat twice a year, or gets a new MacBook every three years.

Finally, before closing this chapter and answering the third sub-question, a reminder that these are idealtype archetypes and statements. They are not absolute, and each individual has their own experiences, worldview, social groups, meanings and competences. Respondent 8, for example, displays some proponent qualities, being interested in global issues, including those related to sustainability. She's gotten very weary of contemporary excesses, leading to some significant sustainable routine adjustments. But she doesn't have much sustainable competence sources outside of television news, thereby limiting the extent to which she can sustainably adjust her routines. Her frugality shows she's willing to go beyond what's normative, but lack of competences makes the application of sustainability more narrow, similar to a sustainable conformer. And another example, R.10b, who may have been categorized as Sustainable Detached before meeting his new partner. Ultimately these disposition are based on what respondents currently express, which is not necessarily rigid; and furthermore, they may show some characteristics outside of their archetype.

On the same note, the social groups in which these respondents traverse may be significantly influential in their sustainable disposition. And the Detached may on average have the least sustainable environment, as opposed to the Proponent.

4.2.4 Findings: answering the third sub-question

The third sub-questions is: 'Using archetype modelling on sustainable dispositions, how does each perspective influence the uptake of sustainable elements in routines?' The past three chapter have already outlined how an individual's disposition affects sustainability in routines. This chapter first summarizes this in the next paragraph, before quickly going over the main differences in the various routine categories. In regards to the latter: the sustainable disposition is to be used mostly as a general

perspective on sustainability, and less so on sustainability within specific routines. After all, respondents from the same archetype may still have different sustainable focuses, for example because it aligns with a personal interest; and similarly, other individuals may focus on different aspects as well. Even so, there are still some general trends that have been identified that count more or less for specific archetypes.

Sustainable disposition summary

Three archetypes have been constructed: the Sustainable Detached, who acknowledge the necessity of sustainability, but are not very interested in the topic and have a hard time actually implementing real sustainable routine changes; the Sustainable Conformer, who is somewhat interested in sustainability and so able to focus and implement routine adjustments, however, they are still tempered therein, mostly focusing on what is normative; and the Sustainable Proponent, who has sustainability as a core ideal and/or interest, and subsequently leads the way in sustainable routines. And similarly with competences, conversations on the topic happen from: rarely, especially outside the household (SD); to mostly topical or related to a specific interest (SC); to sustainability can be its own interesting topic, even in daily routines (SP).

In regards to sustainabilizing routines, the Proponent is thus the most likely to come across new sustainable competences, as well as to make efforts to integrate them into their routines. That being said they aren't perfect, and they have unsustainable aspects in their routines as well. For the Detached this is the other way around, and they require more urging or aligning interest in their sustainable pursuits. The Conformer is in-between and more readily integrates sustainable competences when that is seen as normative in their social group.

Food

Food wise the societal discussion on the unsustainability of meat has reached everyone, so that even the Sustainably Detached are cognizant of the unsustainability of meat. For two of them this has meant that they reduced their meat consumption, but in both cases this was influenced by a vegetarian partner; the other SD likes the taste of meat too much to really cut back on it. In comparison, for Conformers and especially Proponents, partners had little or no influence on cutting back on their meat consumption. The numbers are too low to draw conclusions from this, but it does follow the archetype description of the Detached requiring a bit more urging, even for more normative sustainable action.

As has been discussed prior, there is still a clear division between Proponents and Conformers, seeing as they also pay attention to less normative sustainable aspects such as dairy.

Washing

For washing, differences are less stark. Sustainability in washing routines is mostly constrained by prior mentioned elements from chapter 4.1: hygiene and relaxation/comfort; and routine conditions: sequencing showers after sports, as a wake-up routine, or otherwise. Additionally, conversations on washing routines outside of the household rarely every happen, including for Sustainable Proponents. And so, competences regarding washing routines are low across the board, making it hard to implement sustainable routine changes.

Mostly, unsustainability is recognized when there are obvious moments of resource usage. It does seem that those who are more focused on sustainability are more mindful of this: those who aren't (as) occupied by thrift are mostly Detached (or ex-detached: R.10b).

Energy

For competences it is a similar story to washing routines: energy routines are not often discussed outside the household. There are a little more sustainable conversations on energy routines for Sustainable Proponents, but that mostly considers the sustainability of their energy source (supplier or solar panels), and less so on acting out energy routines. They also follow thrift as highlighted in washing routines, with the Detached focusing somewhat less thereon, and also not really considering their monthly energy bills/overview as much. The other two archetypes are both more mindful, but again, a lack of competences limits them in highlighting unsustainable routines.

Products

As for products, Sustainable Proponents clearly have the broadest focus on sustainability. They talk about sustainability in relation to products more and are generally more conscious of sustainable aspects in purchases. That being said, they are not averse to going for cheap or convenient either; those elements are important across all three archetypes.

The other two have a less clear division. In general, the Conformer tends to be more mindful of sustainability (quantity over quality, or refraining from buying things they don't need), but the difference is less obvious. In the end, a person's own interest seems to significantly influence whether sustainability is considered or not.

5. Conclusions

In chapter 5.1 the research questions will be answered by highlighting the most important aspects of the sub-question answers. In 5.2 the findings will be discussed.

5.1 Answering the research question

This thesis has sought out to answer the following research question: 'How do the two contextual perspectives – routine context and sustainable disposition – influence the incorporation of sustainability into new or existing everyday: what relations are there that inhibit or propagate sustainable routine adjustments?' This will be answered by integrating the sub-question answers and highlighting their most important aspects.

The societal attention for sustainability has pushed the overall awareness and urgency of the necessity of a sustainable society to combat climate change significantly, making it important meanings in daily routines. However, there are still differences in the sustainable disposition that respondents and individuals may have, which influences the sustainability in their routines. Sustainable Proponents were already more occupied with sustainability than others, although for them too it has helped to feel more urgency and focus for sustainable routine change. On the other hands, the Sustainable Detached may recognize and acknowledge the necessity of a sustainable society, but they often find themselves unfocused or just not caring enough to implement sustainable routine changes. For the Conformer the societal attention is perhaps most influential, as it makes sustainable action more normative, leading to them attempting to incorporate it into their routines.

However, there are limits to what societal attention for sustainability can achieve. While Sustainable Proponents are a lot more successful in their sustainabilization efforts, in large, they still have the same barriers as the Conformer and Detached. Specifically, there are two main barriers to sustainability in daily routines. The first is that many daily routines carry core meanings which are paramount to its performances. Whenever sustainability interferes with taste in food routines, or hygiene and comfort in washing routines, sustainable routine change is very unlikely. They are often connected to certain temporal expectations, especially for washing routines. For example, in their regularity, or that they are often being enacted in a certain sequence (e.g. after sports or as part of a morning routine), or requiring a certain duration. For products there are less immediate meanings, although costs are always important, as well as quality of the product. While the former can be a barrier for sustainability, quality and sustainability often go hand-in-hand because of longevity. Naturally, there are individual differences in how important such meanings are to a routine, as well as in comparison with the importance of sustainability. But in general, if the target is routine change, this should always be kept in mind.

The second barrier is a lack of competences, which itself has two main roots. Firstly, there is very little knowledge or feedback for sustainability in especially energy and washing routines. The monthly bills or comparisons are not nearly enough to even identify unsustainability (in) routines, as these moments of feedback are too detached from their enaction. This lack of competences is somewhat negated by tangible resource usage/wastage, such as running water or lights. This results in routines with more observable resource usage being targeted more than those with more hidden resource usage (e.g. showering versus a washing machine). Secondly, social interaction is important in acquiring new

competences, but daily routines are often limited in that regard. Again this holds especially for energy and washing routines, which are often performed alone (or only with other household members as observers) and are rarely topic of conversation. Product routines see somewhat more interaction, being the topic of conversation for larger purchases, or those purchases which align with an interest. Food routines *are* talked about frequently, which has helped the reduction in meat consumption in respondents. That being said, outside of Sustainable Proponents, the focus is very much on meat, and not on other sustainable aspects such as consuming local produce or less dairy. So, while social interaction (with the aid of societal discussion on meat) has enabled more meat-less routine renditions, it is still a fairly narrow – or normative – focus.

Finally, one more important consideration is that even if there is a good competence and meaning basis for sustainable routines, there is still the barrier of breaking with old habits before they can be implemented. There are certain circumstances which force a routine outside of the normal, thereby facilitating an opportunity to integrated more sustainable elements in the routine rendition. A straightforward one is moving house, or more generally: changing the spatial context in which a routine is performed. A new partner, or a partner who changes their routine in a certain way, has also proven to be an effectual trigger for the elemental reconfiguration of routines. While the breaking of old routines is a barrier that affects all archetypes, it seems especially the Detached seems to gain with more urging or reoccurring exposure to a more sustainable routine rendition – such as by a partner, as they are less likely to force the issue themselves. Furthermore, the breaking of old habits, or the learning of new habits, may be benefited by focusing on the positive aspect: 'learning tasty vegetarian recipes' as opposed to 'eating less meat'. And while for the Sustainable Proponent sustainability can itself be the positive aspect, this is generally not the case for the other two archetypes.

5.2 Discussion

For governmental bodies who want to implement sustainable policies aimed at behavior change, it is important to consider the barriers to sustainable routine change in the last chapter. There are certain things which are hard to change, such as core meanings and certain routine conditions, or, for that matter, an individual's sustainable disposition. But they still need be kept in mind so that their impact is lessened. Additionally, there still other aspects which may be improved upon: especially in relation to competences there is a gap to be filled.

Lacking feedback has already been mentioned as severely undermining sustainable intentions, even with Sustainable Proponents. This is also discussed in chapter 2.1.4, by referencing Shove et al. (2012, p.111), who talks about monitoring routines: *"whether instant or delayed, it provides practitioners with feedback on the outcomes and qualities of past performances. To the extent that this feeds forward into what they do next, it is significant for the persistence, transformation and decay of the practices concerned."*. The monitoring of routines, which only happens monthly for energy and washing practices; even though she says whether instant or delayed, it is the delay which is evidently causing trouble here.

Two other modes of monitoring are 'describing' and 'materializing': they capture and to some extent formalize aspects of routine enactments in terms of which subsequent enactments are defined and differentiated. This can perhaps be recognized in food routines, which have some clear descriptions like

eating vegan, vegetarian or biological food. Even though these are not expressly made with sustainability in mind, they are often used to define sustainability in food routines. It solidifies or exemplifies what a more sustainable routine rendition looks like, but is also open enough to have multiple interpretations: you can have a vegetarian diet by never eating meat; but you can also eat vegetarian on a certain amount of days in the week or on specific days.

Conversely, for other routines there isn't something similar, for example: 'sustainable shower day', by reducing the temperature or duration to save energy or water. Such descriptions not only serve to solidify what sustainability in routines entail, it also makes it easier to discuss such sustainable routine renditions with others. It so enables sustainability for the individual, but potentially also makes it available for others in their social group. But this may be a mutual relation: because there are little conversations on daily routines in the first place, there are no similar style descriptions that pop up, thereby making it harder to describe and discuss these routines.

Whether this can be used to further sustainable discussions on these topics remains to be seen. And questions remain about how to implement this. Do these descriptions need to grow organically, or can this be initiated or nudged to an extent? Perhaps it can be facilitated by setting up the grounds for a community, similar to the culinary world when they embraced vegetarian food. And, with sustainability a, but not *the* focus; to keep it interesting for the Sustainable Detached.

The third mode of monitoring is mediation, the sharing and observing of other routine performances. This can be linked with the co-operation of routines, and gives another option to learn more sustainable ways of performing daily routines. Ultimately, it's good to know you're doing well, or not so well. In this role, signs of progress are often important in encouraging further effort and investment of time and energy (Sudnow, 1993; Shove et al, 2012).

So, an avenue of change to explore is to get people talking about daily routines more, so that competences are more readily shared and learned. The household is an entity at its own scale, but is of interest as a site where many broader social and cultural patterns and forces intersect (Fam et al, 2015). Yet many practices around the household are rarely discussed outside the household. It is not enough to just insulate and offer green power: studies have found that the behavioral and social practice effects of occupants is underestimated when assessing the energy consumption of energy-efficient households (Sunikka-Blank et al, 2012; Gram-Hanssen, 2013). Referring once more to Gram-Hanssen (2010): a change in practice may emerge out of social relationships, something that people share with each other; and Hobson (2003, p.107-108): "practices change, not through exposure to scientific knowledge per se, but through individuals making connections between forms of knowledge that link their own, every day and experiential environments to broader environmental concerns".

Finally, this thesis concludes that feedback on especially energy and washing routines is lacking, and furthermore, that the couple with a smart meter is more knowledgeable on this topic than other respondents. Even so, it is mentioned that the smart meter is not an unequivocal success in past experiments (Naus, 2017; Vringer and Dassen, 2016; Gram-Hanssen, 2010). This may be partially explained through the sustainable disposition as employed in this thesis: that there is for Sustainable Conformers little drive to go far beyond what can be normatively expected from them. To quote the

couple once more: 'I compare with others, via the monthly reports from the Nuon [energy supplier], and as long as we're around the average I'm fine.'; responding to this, R.10b: 'It doesn't really motivate to take the next step... it's fine like this'. Especially when now considering those who are less sustainable than the Conformer: the Sustainable Detached, or those who don't acknowledge the necessity and urgency of sustainability in the first place; it can be seen why smart meters are less effective than initially hoped.

6. Reflections

In 6.1 some limitations of the data will be discussed, and 6.2 reflects on the resource process.

6.1 Limitations of the data

Perhaps the most important limitations come from the sample size: 14 interviewees in total, meaning 3-5 per archetype; this is not enough to make statistically relevant conclusions. Even though the research was not meant to be statistically relevant, it is still good to address and underline how this affects the data and conclusions. While the low sample size has been taken into account when looking for conclusions, especially the archetype model is still based on a small amount of respondents. However, what the research attempts to use it for, is rather to show how multiple possible perspectives influence the application of sustainability in an individuals' daily routines. Additionally, these perspectives are the ones which the researcher finds to be most prominent from the data. This is then not a complete set of perspectives (if such a thing is even possible), but rather *a* set of perspectives which can be used to explain certain tendencies. This likely results in only a partial explanation of the trends shown, but this can nevertheless be useful when looking at sustainability within everyday routines.

For the routine context the small sample size is also limiting, with the possibility that other important meanings and competences may be found when enlarging the sample set. Still, while the set of meanings and competences may not be complete, the highlighted meanings and competences do offer insight into the why and how of sustainability within these kinds of routines: especially where competences may be lacking, and which meanings may provide impetus or barriers to sustainable routines.

The routine context has other limitations, however. For example, while the use of multiple categories means that the differences and similarities between categories can be better highlighted, this has meant that interview time had to be split, resulting in less comprehensive data than if only one were to be chosen. Additionally, the energy category is perhaps too broad a category. For example, an option herein is to differentiate between the use of lights and heating, entertainment, and household aids. However, there will always be temporal constraints, and such a categorization perhaps better fits with a more narrow focus on energy routines specifically.

Finally, the data consists of respondent answers on questions, meaning it is respondents themselves who evaluate how good they are at acting sustainably. While this can still offer clear information (e.g. eating meat at will versus eating vegan), there is an element of interpretation: how long does a lengthy shower take? How often do you eat meat, when you only eat a little meat? Or, what are essential products to buy? Since there is little hard data, respondents need to compare themselves to others, or to their prior routines. Herein, the environment and archetype may also affect how a respondents sees their own sustainable actions: being surrounded by only Sustainable Proponents may induce other interpretations than being surrounded by Sustainable Detached. And similarly, having more sustainable competences makes it easier to know what one is *not* doing.

6.2 Research process

The research has been an iterative process, which impacts the data. Firstly, increasing experience and familiarity with the conducting of interviews as well as the subject matter has meant that later

interviews were better targeted to acquire the intended data; especially considering that important routine meanings and competences were gathered through the interviews.

Secondly, the change in sustainable disposition to the creation of archetypes rather than utilizing the mentality model was made after the interviews were done, and has meant that questions on this part could have been a little bit better. Now, the questions are based on the differentiation of the groups from the mentality model, rather than a more iterative process in which distinctions between respondents can be sought and enquired after. Even so, the data was sufficient for the build-up of three different archetypes. With a little more direction in the questions perhaps the archetypes could be further differentiated, maybe even leading to another archetype or a sub-archetype (by splitting an archetype in two). Still, the archetypes serve to highlight certain tendencies, and even though the difference in archetypes may be a little bland, it does add to the research and conclusion as a whole.

In the future this could perhaps be prevented by more communication with other researchers (supervisor or colleagues): it isn't easy to realize and acknowledge that perhaps part of the initially decided upon model does not fit the research after all. Although experiencing this certainly helps towards identifying this earlier in the future.

Finally, the research was quite broad, and although the reasons therefore have been explained, it may have been better to start with a smaller scope. Perhaps focusing on routines that belong to the energy category would've provided similar ways to differentiate; as has just been discussed, it is a broad category. That being said, the current setup does allow for better comparison between routine categories, and is more comprehensive in looking at how individuals implement sustainability in their lives. Additionally, as a personal realization, structure is not the strong point of the researcher, which seems especially important in broad research enterprises. While does not mean this should be avoided, it would be better to take smaller steps, so that more experience can be gained upon which can be built. It likely would have lessened stress significantly.

7. References

Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (Eds.). (2001). *Handbook of ethnography*. Sage.

Bartiaux, F., Gram-Hanssen, K., Fonseca, P., Ozoliņa, L., & Christensen, T. H. (2014). *A practice–theory approach to homeowners' energy retrofits in four European areas.* Building Research & Information, 42(4), 525-538.

Bedford, T. (1999) *Ethical consumerism: Everyday negotiations in the construction of an ethical self*. Unpublished PhD thesis, University College, London, UK

Bickerstaff, K., & Walker, G. (2001). Public understandings of air pollution: the 'localisation' of environmental risk. *Global Environmental Change*, *11*(2), 133-145.

Binkley, S. (2007). Governmentality and lifestyle studies. Sociology Compass, 1(1), 111-126.

Boersma, H., Theule, P. (2018) *Overheid, grijp in! Het is hoog tijd voor een suiker- en vleestaks*. De Volkskrant. Acquired from: https://www.volkskrant.nl/kijkverder/2018/voedselzaak/ideeen/overheid-grijp-in-het-is-hoog-tijd-voor-een-suiker-en-vleestaks/

Bourdieu, P. (1976). *Marriage strategies as strategies of social reproduction*. Johns Hopkins University Press.

Bourdieu, P. (1984). A *social critique of the judgement of taste*. Traducido del francés por R. Nice. Londres, Routledge.

Blake J, (1999), Overcoming the 'value - action gap' in environmental policy: tensions between national policy and local experience. Local Environment 4, 257-278

Breadsell, J. K., Byrne, J. J., & Morrison, G. M. (2019). Household energy and water practices change postoccupancy in an australian low-carbon development. *Sustainability*, *11*(20), 5559.

Clifford, N., French, S., & Valentine, G. (Eds.). (2010). *Key Methods in Geography*. Thousand Oaks, United States: Sage publications.

Cresswell, J.W., Cheryl, N.P., (2018). *Qualitative Inquiry and Research Design. Choosing among five approaches*. Sage

Carrington, D., 2018. Avoiding meat and dairy is 'single biggest way' to reduce your impact on Earth The Guardian. Acquired from: https://www.theguardian.com/environment/2018/may/31/avoiding-meat-and-dairy-is-single-biggest-way-to-reduce-your-impact-on-earth

DEFRA Department for Environment, Food and Rural Affairs (The Stationery Office, London), (2005). *Changing Behaviour Through Policy Making* (The Stationery Office, London)

De Gelderlander, 2017. Van Woerkom was de eerste en de mooiste supermarkt. De Gelderlander, acquired from: https://www.gelderlander.nl/nijmegen/van-woerkom-was-de-eerste-en-de-mooiste-supermarkt~a0e3bc8e/

Denscombe, M. (2003). *The good research guide: for small-scale social research projects* (Second edition). London, United Kingdom: McGraw-Hill Education.

Elzen B., Geels F. W., Green, K., (2004) *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*. Edward Elgar, Cheltenham, Glos

Eerlijkegeldwijzer.nl, (2020). Obtained from: https://eerlijkegeldwijzer.nl/bankwijzer/

European environment agency, (2016), obtained from: https://www.eea.europa.eu/publications/airquality-in-europe-2016

Evans, D., & Jackson, T. D. (2007). Towards a sociology of sustainable lifestyles. *RESOLVE Working Paper Series*, *3*.

Essent, n.d. Acquired from: https://www.essent.nl/kennisbank/energie-besparen/apparaten/oude-koelkast-vervangen

Fam, D., Lahiri-Dutt, K., & Sofoulis, Z. (2015). Scaling down: researching household water practices. *Acme*.

Fishbein, M., & Ajzen, I. (1976). *Misconceptions about the Fishbein model: Reflections on a study by Songer-Nocks*. Journal of Experimental Social Psychology, 12(6), 579-584.

Geels, F. W., Hekkert, M. P., & Jacobsson, S. (2008). The dynamics of sustainable innovation journeys.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Univ of California Press.

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford university press.

Gram-Hanssen, K. (2010). *Standby consumption in households analyzed with a practice theory approach*. Journal of Industrial Ecology, 14(1), 150-165.

Gram-Hanssen, K. Efficient technologies or user behaviour, which is the more important when reducing households' energy consumption? *Energy Effic.* 2013, *6*, 447–457.

GreenPeace, (n.d.). Obtained from: https://www.greenpeace.org/nl/acties/groene-stroom-ranglijst-2019/

Guba, E. G., & Lincoln, Y. S. (1994). *Competing paradigms in qualitative research*. Handbook of qualitative research, 2(163-194), 105.

Halkier, B., & Jensen, I. (2011). Methodological challenges in using practice theory in consumption research. Examples from a study on handling nutritional contestations of food consumption. *Journal of Consumer Culture*, *11*(1), 101-123.

Hand, M., Shove, E., & Southerton, D. (2007). *Home extensions in the United Kingdom: space, time, and practice*. Environment and Planning D: Society and Space, 25(4), 668-681.

Hand, M., & Shove, E. (2007). Condensing practices: Ways of living with a freezer. *Journal of Consumer Culture*, 7(1), 79-104.

Hampton, S., & Adams, R. (2018). *Behavioural economics vs social practice theory: Perspectives from inside the United Kingdom government.* Energy research & social science, *46*, 214-224.

Hargreaves, T. (2011). *Practice-ing behaviour change: Applying social practice theory to proenvironmental behaviour change.* Journal of consumer culture, 11(1), 79-99.

Hargreaves, T., Nye, M., Burgess, J. (2013) *Keeping energy visible? Exploring how householders interact with feedback from smart energy monitors in the longer term*. Energy Policy 52: 126–134.

Hobson, K. (2003) *Thinking habits into action: The role of knowledge and process in questioning household consumption practices*. Local Environment 8: 95–112.

Jackson T, (2005). *Motivating sustainable consumption*, obtained from: http://www.sd-research.org.uk/post.php?p=126

Johannesson P., Perjons E. (2014) Research Strategies and Methods. In: An Introduction to Design Science. Springer, Cham

Judson, E. P., & Maller, C. (2014). *Housing renovations and energy efficiency: insights from homeowners' practices.* Building Research & Information, 42(4), 501-511.

Fastenau, J., Koenen, B. (2020). *Duurzaamheid in de RES-regio Arnhem-Nijmegen*. KANTAR. Acquired from: https://www.regioan.nl/media/RESAN-enqueteinwoners2020.pdf

Köhler, W. (2017). *Hoe gevaarlijk is worst?* NRC. Acquired from: https://www.nrc.nl/nieuws/2017/05/21/worst-9725546-a1559789

Kamerstuk 32 813, nr. 342, 2019. Acquired from: https://www.klimaatakkoord.nl/documenten/publicaties/2019/06/28/klimaatakkoord

Moses, J., & Knutsen, T. (2012). *Ways of knowing: Competing methodologies in social and political research*. Macmillan International Higher Education.

Motivaction, n.d. Acquired from: https://www.motivaction.nl

Motivaction, (2020). *Vijf Tinten Groener. Nederlanders op weg naar een duurzamere samenleving.* Motivaction

Naus, J. (2017). *The social dynamics of smart grids: On households, information flows & sustainable energy transitions.* Doctoral dissertation, Wageningen University.

Nettleton, S., Green, J. (2014). *Thinking about Changing Mobility Practices: How a Social Practice Approach Can Help.* Sociology of Health and Illness, 36(2), p. 239 – 251.

Nijmegen, 2011. *Đuuzaamheidsagenda 2011-2015*. Gemeente Nijmegen. Acquired from https://www.bouwstenen.nl/sites/bouwstenen.nl/files/uploads/Duurzaamheidsagenda_Gemeente_Nij megen_2011-2015_def.pdf

Nijmegen, (2018). *Warmtevisie Op weg naar een aardgasvrij Nijmegen*. Gemeente Nijmegen. Acquired from: https://aardgasvrij.nijmegen.nl/waarom-aardgasvrij/

Nye, M., Hargreaves, T. (2010) *Exploring the social dynamics of proenvironmental behavior change*. Journal of Industrial Ecology 14: 137–49.

Oxford Learner's Dictionaries, n.d. Acquired from: https://www.oxfordlearnersdictionaries.com/definition/english/archetype?q=archetype

Pantzar, M., & Shove, E. (2006, June). *Circuits of reproduction and the dynamics of practice in everyday life.* In Paper for the Second Organization Studies Summer Workshop on'Re-turn to Practice: Understanding Organization As It Happens (pp. 15-16).

Prendergast J, Foley B, Menne V, Isaac A K, (2008). *Creatures of habit: the art of behavioural change*, Social Market Foundation, London, http://www.smf.co.uk/creatures-of-habit.html

Rapley, T., & Seale, C. (2004). Qualitative research practice. *Qualitative research practice*, 16-34.

Reckwitz,A. (2002a). *The status of the "material" in theories of culture: From "social structure" to "artefact."* Journal for the Theory of Social Behaviour 32(2): 195–218.

Reckwitz, A. (2002b). *Toward a theory of social practices*. European Journal of Social Theory 5(2): 243–263.

RIVM, (2004). *Maatschappelijke waardering van duurzame ontwikkeling*. Acquired from: https://www.rivm.nl/bibliotheek/rapporten/500013007.pdf

Schatzki, T. R., & Schatzki, T. R. (1996). *Social practices: A Wittgensteinian approach to human activity and the social*. Cambridge University Press.

Schatzki, T. R. (2002). The site of the social: A philosophical account of the constitution of social life and change. Penn State Press.

Shove E (2003) Comfort, Cleanliness and Convenience: The Social Organization of Normality. Oxford: Berg.

Shove, E., & Pantzar, M. (2005). *Consumers, producers and practices: Understanding the invention and reinvention of Nordic walking*. Journal of consumer culture, 5(1), 43-64.

Shove, E. (2010). *Beyond the ABC: climate change policy and theories of social change*. Environment and planning A, 42(6), 1273-1285.

Shove, E., Pantzar, M., & Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. Sage.

Southerton, D., Warde, A., and Hand, M. (2004) *The limited autonomy of the consumer: Implications for sustainable consumption. Sustainable Consumption: The implications of changing infrastructures of provision.* Cheltenham: Edward Elgar, 32–48.

Southerton, D. (2012) *Habits, routines and temporalities of consumption: From individual behaviours to the reproduction of everyday practices.* Time & Society, 22(3):335-355.

Spaargaren G and Van Vliet B (2000) *Lifestyles, consumption and the environment: The ecological modernisation of domestic consumption*. Environmental Politics 9: 50–76.

Spaargaren, G. (2003). Sustainable consumption: a theoretical and environmental policy perspective. Society & Natural Resources, *16*(8), 687-701.

Spaargaren, G., van den Burg, S.W.K., Bargemen, B. (2007). *Contrast. More sustainable lifestyles and consumptions. A theoretical perspective for the analysis of transition*. Acquired from: https://www.researchgate.net/publication/254796898_Contrast_More_sustainable_lifestyles_and_cons umption_A_theoretical_perspective_for_the_analysis_of_transition

Speksnijder, C. (2015). *WHO: bewerkt vlees eten kan leiden tot kanker*. De Volkskrant. Acquired from: https://www.volkskrant.nl/wetenschap/who-bewerkt-vlees-eten-kan-leiden-tot-kanker~bce3e9e3/

Spradley, J. P. (1979). *The ethnographic interview*. Fort Worth, Tex.

Sudnow, D. (1993). Ways of the hand: The organization of improvised conduct. MIT Press.

Sunikka-Blank, M., & Galvin, R. (2012). Introducing the prebound effect: the gap between performance and actual energy consumption. *Building Research & Information*, *40*(3), 260-273.

Strauss, C., & Quinn, N. (1997). A cognitive theory of cultural meaning (Vol. 9). Cambridge University Press.

United Nations, 2015. *Transforming our World: The 2030 Agenda for Sustainable Development*. United Nations. Acquired from:

https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Dev elopment%20web.pdf

Van Thiel, S. (2014). *Research methods in public administration and public management: An introduction*. Routledge.

Warde, A. (2005). *Consumption and theories of practice*. Journal of consumer culture, 5(2), 131-153.

Welch, D., & Warde, A. (2015). *Theories of practice and sustainable consumption*. In Handbook of research on sustainable consumption. Edward Elgar Publishing.

World Commission on Environment and Development. (1987). Our common future. Oxford: Oxford University Press.

Yin, R. K. (2009). *Case study research: Design and methods* (Volume 5). Thousand Oaks, United States: Sage publications.

Yin, R. K. (2011). Qualitative research from start to finish. New York, United States: Guilford Publications.

8. Appendix

A Data on sustainability in routines

Summary of the elements (meanings and competences) and context changes that instigate or bar sustainable routine adjustments. They have been separated into the categories similar to chapter 4.1.

A.1 Sustainability in food routines

Respondents widely report more awareness of the contribution of meat to climate change, because of societal discussions the past years. Additionally, the availability of non-meat/vegetarian options has been stated as being important to consider alternatives. Furthermore, two respondents mention that the focus on tasty vegetarian options has been much more fruitful than endlessly listing the downsides of meat. Respondent 9a: *'I don't think: - oh let's eat less meat -, I just like those* (vegetarian) *dishes a lot'.* Interestingly, both respondents who say this are into cooking as a hobby and/or work. Others touch upon this as well, by stating their like or dislike for fake-meat options.

Respondents 9a&B also state to throw away less food. Although they mention multiple contextual factors in this, 9a gives examples of her focusing on limiting waste: consuming meat before it spoils; or by freezing bread (it previously spoiled frequently) and defrosting it when required. This seems linked to thrift, as 9a mentions about throwing it away: *"it's a shame, because of the waste... we buy it from the bakery, it's a bit more expensive"*. As stated before, about thrift: sometimes the sustainably aspect seems only part of the equation. The fact that the bread is from an expensive bakery seem to exacerbate the negative connotations, when compared with throwing away cheaper bread that is perhaps considered less 'special' (and to these respondents money is generally not an issue). Or respondent 2 - who tends towards a Sustainable Detached, seeing as he's not that occupied with sustainability -, who dislikes making too much coffee and having to throw the leftovers away.

Another often mentioned instigator for sustainable change in food is the change of diet through partner(s). Respondent 6 had an ex-partner who was vegan, and experienced that a vegan diet is not that much harder than a vegetarian one. She does claim that she was interested in it already, and would've tried it eventually, but it has proven to be the sufficient final push: she's still vegan after that relationship ended. Similarly, respondents have switched to a vegetarian or vegan diet, or have limited meat intake significantly, because of a dietary change in current partners, or a new partner with a different diet. This seems connected to experiencing a new routine, as well as gaining the know-how of buying, preparing and consuming vegetarian/vegan options. Another related factor is convenience, as it takes more time and effort to prepare various separate meals: R.2; *"It's also because it's practical, because otherwise I'd have to cook a lot*". Convenience is also mentioned in a different context, by respondent 8, who simply states to dislike preparing meat. In these examples convenience can coincide with more sustainable behavior, though it's not clear if the convenience factor is necessary for the change to happen; it likely changes from case to case.

For respondent 7, her (new) vegan partner, made her consider and ultimately switch to a vegan diet. However, with health as primary reason, and sustainability at second place. This vegan diet led to an increased focus on her food intake, which has also made her more aware and interested in the different aspect of food. For her, food is no longer only about eating what is cheap and tasty, like it used to be. It's also about being sustainable and healthy; something which she's expresses a lot of interest in nowadays. She likes to discuss food (whether sustainable or healthy) with friends, colleagues and strangers, as well as looking up videos on the internet, and has even attended a lecture on growing her own food (permacultures) on festival(s). For her, sustainability and health are now part of her lifestyle and future goals, at least on food related topics. Respondent 10a&b similarly mention the linked focus on both health as well as sustainability, although they are not similarly idealistic or focused in their purchase thereof: they 'only' reduced their meat consumption.

Furthermore, on the topic of meat, two respondents have personal experiences which have contributed to their lessened meat consumption. Respondent 8 drastically lessened her meat consumption - almost overnight: one evening she was preparing meat, when she felt as if she was cutting into a corpse. This does coincide (temporally) with moving house as well as increased aversion to excesses, which all happened around the same time. She does still buy meat like salami once in a while: *"to have a different taste"*. For respondent 9b there was a moment of realization when he was preparing food for more than 30 people, and was cutting into *"mountains of meat"*. He relates it to his dislike of excesses. For respondent 8 this singular experience was paramount, but respondent 9b earlier states that the societal discussion surrounding the consumption of meat was the instigation to their (household) change.

When doing groceries, any sustainable considerations are made through quality marks or simply buying according to a diet (vegan/vegetarian/less meat). Respondents express to have more attention for biological or animal friendly quality marks than before, partly because they are more available cost-wise, as well as that they appear more often. Costs remain a contentious factor in this aspect, as especially biological quality marks are often significantly more expensive than regular options. While respondents are generally willing to pay a little more, the difference is often too steep. Respondent 4 even states that when he goes shopping, he tends to want to go for good (read: cheap) deals, which opposes what most guality marks stand for. He's the only one to state this, but may be part of the truth for others as well. Aside from that, there is also some mistrust towards quality marks, respondent 8 states biological quality marks to be 'nonsense' and too expensive. On the other hand respondents 3a&b in particular only trust the biological ones, in relation to quality marks in general they question: "are they really true?". Respondent 3b additionally remarks that there are too many, and that he "can't see the forest through the trees". In general, the biological quality marks seems the most important for respondents. Respondent 8 has also stated to have seen the 'abhorrent' exploitation of palm-oil, in a documentary. She tries to avoid it, but: "it's very difficult, I just try the use exactly what suffices"; because it's in so many products.

Two interviewees have mentioned the future goal of cultivating their own vegetable/herb garden. Respondent 7 has been increasingly into healthy and sustainable food since she's taken up a vegetarian – and, eventually vegan – diet. She watches documentaries on the topic, converses about it with colleagues and friends, has attended lectures on permacultures on festivals. It has become an idealistic future goal for her to cultivate her own vegetable/herb garden (permaculture). Respondent 9a got this idea from seeing the very common vegetable/herb gardens in Italy, while on holiday. However, she has also expressed to be bad at gardening, as well as not really liking it very much. As a result, her goal seems more doubtful.

Finally, some sustainability considerations and changes can be argued to belong to both the Energy, Products, or Food category, namely: electric stoves, a toaster and the use of an electric kettle. Electric stoves seem to be an option to all respondents, as a way to be more sustainable, even though some express to prefer cooking on gas. However, this will only be a consideration when remodeling the kitchen or moving house; it's not an important target on its own.

The toaster and kettle are both only relevant to one household. The toaster is a purchase done by respondent 3a, to stop 3b from having to toast bread in the oven, which 3a considers very wasteful. Respondent 2 prefers to use a kettle to heat up water, because he thinks it's likely more sustainable, and additionally, it's quicker.

One last note before going to the overview: it is striking, that in general, by far the most mentioned sustainable focus is on reducing ones' meat consumption. Only a handful extend this to other food products, notably those with a vegan diet. It seems then, that the societal discussions has a significant influence on their consumptions habits, be it directly or indirectly (for example through the increased availability of tasty alternatives).

A.2 Sustainability in washing routines

Many respondents state to either shower 'not that long', or to have decreased shower duration and/or frequency in recent years. With the latter linked to increased awareness as well as a larger focus on thrift. For some, thrift has always been part of showering, whereas for others it's a new thing: R.10a to R.10b: *"For you it's easier to start the shower and then first hang out the laundry to dry"* 10.B: *"That's also something I don't do anymore"*.

Respondents state to have trouble with decreasing shower times/frequency, which is linked to the general enjoyment or relaxation showering gives: "I like it a lot to stand under the shower every morning anyway", "I don't shower long, unless I need it mentally" and "It's time for me, to chill for a bit".

In some cases, such as respondent 9b, there seems to be a tinge of guilt with their inability to significantly decrease shower times: 'when I'm taking a shower, I always think -yeah, I got to stop now-I really think about it'. In others cases, such as respondent 6, a more or less satisfactory balance can be found. She had a goal when moving house: she wanted to limit her shower duration. While she started off doing just that, she eventually regressed a bit, before finding a balance. During this process, she also got a timer as a gift from her partner, but it didn't really help with her goal: "when it went off I just turned it over again", and eventually it fell and broke. However, while R.6 seems intent on limiting water waste during showers, it is just personal benefit which limits her sustainability in other washing routine: she won't wait for the washing machine to fill up when there are particular clothes she wants to wear.

Other respondents *do* mention to generally wait to fill up a machine, however, most other respondents also don't live alone, making it easier to do full cycles. Sport clothes are a general exception to this, since most respondents consider them too dirty to wash together with normal clothes. Personal benefit, in

this case described as convenience, can also prove an incentive to be sustainable, when it corresponds with other benefits: respondent 9a has introduced the '2-times towel usage before washing', not only because of sustainable considerations, but also because of the large amount of washing that she does. And similarly, R.2 brushes his teeth in the shower to save time.

Mentioned as well, but less, is the feeling of cleanliness that washing (clothes etc.) gives; not necessarily with a focus on hygiene, but with a focus on fresh and new. Such cleanliness and the enjoyment of showering can both said to be part of a personal benefit, which contests respondents intent with being sustainable or thrifty.

Respondent 8 also states that she started cutting down on shower time after she moved, although she didn't necessarily plan for it (contrary to R.6). For her, this is linked to other routine changes which started around the same time, likely sprouting from a general increasing dislike of and attention to the excesses of contemporary society, which started around 10 years ago. Respondent 7 also lessened shower durations after moving, but for her it's connected to having to pay for her own bills, making her realize the 'cost of things'.

Costs are mostly mentioned by those who pay a lot of attention to costs such as respondents 6&7. In their case, the cost of washing forms an incentive to decrease resource usage. As stated, respondent 7 noted that she pays more attention to resource, because she's more aware of 'the cost of things', even though she pays inclusive (i.e. water and energy bill are incorporated into her rent, which is set at a specific price). Another mention of costs is done by respondent 9a, who looked up the price of taking a 1-hour shower, because her pubescent son just took a 1-hour long shower; she remarked: *'it doesn't even really cost that much'*. This shows that for them, the costs aren't really significant enough to instigate more sustainable behavior (rather the opposite).

When discussing washing routines it also became apparent that respondents sometimes lack a certain kind of knowledge. As just discussed, respondent 9a has looked up the price of showering for 1 hour, but this is the only instance in which direct information was sought or used. On the other hand, when asked if they knew how effective their 'use towels twice instead of once' routine-change is, they remarked: "not at all". Similarly, eco-setting are also poorly understood at times: for example, respondent 6 (who's generally very sustainably conscious) does not use the eco setting: 'it takes longer... I think it uses more energy in the end, or more water.... I never looked it up' and 'I used the eco setting on the dishwasher once, but it didn't clean properly'. On the other hand, she does use shorter washing cycles when not completely filling up the washing machine, in order to be more sustainable. Others aren't even sure whether they have eco-setting at all. Uncertainty regarding the usefulness of eco-settings is perhaps linked to a lack of direct feedback; it is unclear how much resources are used and how much certain actions affect this. So, while respondents do feel the need to be thrifty, and do realize that there is a financial and environmental cost to showering, there seems to be a meagre supply of specific sustainable knowledge or feedback to accomplish this. This also lessens the effect that eco-settings in products can have on the sustainability of routines.

Similarly, washing routines are rarely discussed, and consequently, know-how is rarely traded. Not one of the interviews mentioned a conversation on hygiene routines, other than between household

members. And even then it isn't always discussed: 'these interviews are so insightful', remarked a respondent during a discussion of their washing routines.

As a last note it is furthermore interesting that especially showering is mentioned as routine which can, or has been, improved upon. This may be because its resource usage is more tangible: you can feel and see the water flow. Another reason could be that there is more (perceived) personal benefit linked to this routine: staying under the shower when you're done is in obvious contention with any sustainable goals. Finally, it's easy to decrease resource usage in a technical sense: you can simply turn off the water when you're done. Compare all that with using a washing machine: the resource usage of the washing machine is much less evident; it's harder to influence washing duration - are other setting sufficient for cleaning properly? -; and the personal benefit aspect is perhaps also less evident (personal benefit can be interpreted as following one's own interests). To clarify the latter: it may be sufficient to wash less often, or to combine sports washes with other washes, or to use less intensive settings (temperature) or resources (washing powder). But the current washing routines are done because it gets the clothes properly, or sufficiently, clean: it's like the changed standard which is expected of washing routines throughout the last centuries (Shove, 2003). The options just mentioned would challenge that current concept of clean clothes. In comparison, decreasing shower time doesn't necessarily cut into those expectations, as long as it's the enjoyment-time which is cut.

A.3 Sustainability in energy routines

All respondents aim to be thrifty with energy usage. A link with sustainable awareness isn't always specifically stated, but can be assumed as a result from the general increase in sustainable awareness. When asked about it, respondents 9a&b affirm that they are more attentive about heating and electricity usage in recent years, even though they state to always have been thrifty. Likewise, most respondents state to be more attentive to energy usage in recent years. Most examples are from putting out the lights and closing open doors/windows, although some respondents mention to disconnect devices from chargers and in general be more mindful of leaving appliances 'on'.

Similar to washing routines, respondents which are more focused on financial matters add costs as additional factor to be thrifty. For instance, respondent 6 says she pays more attention to electricity usage than before because she used to pay inclusive whereas she pays for her own electricity now. And, as mentioned during washing routines, respondent 7 has stated that costs have made her more aware of the fact that she's using resources; even though she pays inclusive, she says the realization of resource costs have made her pay more attention to thrift.

Prior example also shows that moving house can lead to routine changes, and in this case not (only) because of a different spatial context: the financial situation has also changed, for respondents 6&7. Similarly, for respondent 8, moving has affected her energy usage routines: while she used to prefer using night power to save costs, her current apartment doesn't have that option, and she therefore doesn't do so anymore.

However, there's also a more direct link to moving house as an instigator of change: respondents 9a&b state to strive for an energy neutral house if/when they move, which may include energy saving or producing investments. It seems that, at least for them, the road to an energy neutral house is paved

with sustainable investments; not so much through a change in routines. This seems at least partially connected, again, to a lack of specific knowledge: in this category it is exemplified by respondents not knowing which devices use more or less energy.

Most respondents have some form of feedback on their energy usage, they check their bills and/or use the overview provided by their supplier; both generally monthly. It should be noted that the task of taking care of energy bills/suppliers is generally assigned to one person in multi-person households. It was a little different for respondent 4, who's monthly payments were calculated for 1 person, rather than the 2 person household they were; and they had to pay $\leq 1,600$ at the end of the year: *"you pay energy and water, but it doesn't really register. Until you have to pay everything at once! .. Afterwards you're suddenly like: hey, maybe turn of that lamp; and why is the heater on 22°? 20° is fine as well!"*.

However, this information is generally not specific enough to enable improving (decreasing) the overall energy usage very well; respondents don't really seem to know which routines use up the most energy, nor do they know how to curb this. Coming back to respondents 9a&b, they state to use more energy than the average household of similar composition. When elaborating on this, they state to have no clue why this could be, other then: a very wasteful (pubescent) son, or a wrong reference by the provider. They do acknowledge that there are a number of things they can do better, but those are mostly related to sustainable investments (isolation, solar panels, etc.). Evidently, the provided information isn't specific enough to identify energy intensive routines.

This is in contrast with respondents 10a&b, who's new current home came with a smart meter. They *do* notice which routines are more or less intensive, and are better able to adjust to this. They mention to always be somewhat below the average comparable household, when using energy usage comparison from their supplier.

But, excluding respondents 10a&b, the lack of information and feedback is echoed by other respondents, including the more sustainable ones. Respondent 6, for instance, has a significantly lower electricity usage than average. And while she often looks at the monthly overview, and can identify periods where she hasn't been at home (as much), she also doesn't know which of her routines or appliances are the big energy consumers: "*it's not as if I can see what I used it on*".

This doesn't mean that improvements don't happen at all: respondent 3.a has switched from using the oven to toast bread to buying and using a toaster (which, incidentally, has also been a routine change of the researcher – although in my case it *was* done after seeing relatively high average energy usage through the energy suppliers overview); R.4 bought timed light-switches after seeing them used by acquaintances; R.6 now tries to take unused appliances out of the power socket; and respondent 9a stopped using the microwave to defrost bread and lets it heat up naturally (although she mentions taste as accompanying reason to change this routine). This exemplifies that, similar to washing routines, respondents report to be more aware of resource usage, and act accordingly. In none of these cases, information from the supplier was stated to be the cause of the change in routine. However, there may be an indirect link, through a heightened awareness of personal resource usage and how that compares with other households.

Another such example: R.2 uses a kettle to warm up water when cooking, instead of the gas stove. While he doesn't know for sure whether this is more sustainable, his assumption that it is, is enough to make him incorporate it into his routine. However, connected to this is also another personal benefit: it gets the water boiling more quickly.

Conversations on the topic of electricity usage rarely happen outside the household. In fact, the only things which respondents mention to discuss outside their household is whether to buy/invest in solar panels. What is discussed are devices, such as the timed-light switches, perhaps because they are more visible. And in those cases, sustainability can be the topic of conversations.

Within the household, there seems to be some discussion regarding energy routines. R.2 has mentioned more efficient ways to cook water to his partner. Lights and/or heating are often mentioned as well, sometimes leading to discussions. Naturally, household members also generally experience each other's routines, making the exchange of routines and ideas easier. However, these interactions aren't always fruitful, as respondent 2 states: '*I just think she forgets it* (turning off lights) *more quickly*', and, '*I have mentioned she can be more efficient using the water boiler by using less water, but that doesn't seem to stick*'.

A.4 Sustainability in product routines

For more common products, thrift is often stated as being part of efforts to be sustainable, although this can be interpreted in multiple ways. For respondent 8, this relates to limiting excesses: she thinks many appliances are nonsense and unnecessary. This idea is also apparent in other respondents, although what qualifies as unnecessary is vague. Respondent 8 doesn't find a dishwasher, kitchen hood, microwave, etc., necessary, whereas for other respondents (e.g. 2 and 9b) these seem to belong to standard (kitchen) equipment. Even so, each mentioned respondent states to not buy *"that many products"*. A side note is that respondent 8 lives on her own whereas the others have families with children, consequently having different needs. Respondents 9a&b also show their thrift through their choice of products: going for quality and longevity over price. However, of all prior considerations, only for respondent 8 is this a new change. All of the others express to pay attention to this for a long time, often through their upbringing; it hasn't been a recent sustainable change.

What has been changing, for respondents 9a&b, is the realization of their usage of single use items. Since the municipality collects plastic waste separately (and so they now gather it separately), they have realized how much plastic they use: "*4 bags of plastic, one (little) bag of waste*". It showed how much waste their old coffee (cups) machine produced, which they disliked. When it finally broke down they decided to invest in an expensive but quality coffee machine without disposable cups.

Replacing old products only when they break down is a general trend seen in nearly every respondent, even if the product may be unsustainable (through its resource usage). Respondents mention that they consider using up old devices to be more sustainable than buying new ones; after all, you do not fully utilize the lifetime of a product.

The focus on quality products is far from equivocal however: some respondents choose to go for the cheapest/cheaper option. Especially those respondents who pay attention to costs don't consider

longevity as much, even if they are sustainable in other routines: R.9 (food processor) and R.8 (fan) bought the cheapest products they could find in the store. For some products (refrigerator, -dishwashing machine, dryer etc.) attention is paid to the energy label, although here too costs can trump sustainability: R.6&7 both have 2nd hand appliances of which they are unsure of the label.

However, respondent 4 is really the odd one out: he is quite materialistic in that he likes things and paraphernalia, and additionally he wants to get it cheap, often resorting to online purchases originating from China. He does not seem to consider sustainability at all in the purchase of a product, although sometimes he will buy products with sustainability as aim (light switches to reduce the energy usage).

Respondent 6 is one of the few who mentions the (un)sustainability of clothes. While she doesn't have the money to buy from sustainable brands, she does try to use her clothes for a very long time: "*it was an expensive jacket, but I use it for 5-6 years. Until it starts to leak..*". As is common with this respondent, she discusses these things with her sister (among others): "*I can't afford them myself, she can, but it does make me more aware.*". Respondent 7, too, acknowledges the (un)sustainable aspect in buying clothes as a result of her social environment, as well as watching (online) movies: "*I used to be able to shop clothes a lot, I just love it, but now I'm considering buying a sewing machine to make my own clothes*". And discussed earlier during the archetype segment, respondent 3 noticed an acquaintance wearing 'cute' second hand clothes, and decided to buy them herself.

Finally, it should be noted that, just like was mentioned in the food category (but is visible in every category in some way), sustainably minded respondents sometimes allows themselves to 'cheat'. Taking respondent 6 as an example again, about her macbook laptop: "*After 3 years I think: it's working fine still ... and worth quite a bit. So I sell it for a decent price so I can buy a new one relatively cheap. That's not very sustainable*". Evidently, even the more sustainably minded respondents need to balance sustainability with wants.
B Interview guide

The interview guide (in Dutch). The third part was mostly in relation to the mentality model archetypes.

1) Introductie

Hallo, ten eerste bedankt dat ik jullie mag interviewen.

Dan wil ik nogmaals bevestigen dat het interview wordt opgenomen, en dat het wordt geanonimiseerd. Ben je het daar mee eens?

Ik doe onderzoek naar duurzaamheid in huishoudens in Nijmegen. De focus van het onderzoek en de interviews is om te kijken hoe duurzaamheid zich uit in dagelijkse routines en handelingen, en hoe dat verandert is door de jaren heen. Het idee is een wat informeler interview, voel je vrij je eigen interpretatie te geven vragen. Zal eventueel onderbreekt als het te lang doorgaat.

Ik wil nog benadrukken ikzelf ook geen heilig boontje ben, als ik mezelf zou interviewen dan zou dat zeker geen perfect duurzame antwoorden zijn.

Het interviews is opgesplitst in 3 delen:

- i. introductie
- ii. dag doorlopen

Hierin zal ik redelijk vaak inhaken. (lijstje opnoemen). En ik zal ook wel vragen waarom je er wel of niet over nadenkt, dat is ter informatie, niet verwijtend.

iii. algemenere vragen over duurzaamheid

Heb je nog vragen? (Kan ook later)

2) Doorsnee vrije dag doorlopen

Laat geïnterviewde een recentelijke dag doorlopen, van opstaan tot naar bed gaan.

Bij alle relevante onderwerpen (food, washing, energy of product gerelateerd):

- 1) Vertel routine
 - Hoe laatste keer?
- 2) Let je op duurzaamheid tijdens handeling X?
 - Waarom niet?
 - Hoeveel?
 - Hoe vaak: Neem het dus een prominente rol in?
- 3) Let je op duurzaamheid op ander moment gerelateerd aan routine; zoals bij aanschaf gebruikte 'materials'?
 - Waarom niet?
 - Waarop let je wel?
 - *Keuze online/offline?*
- 4) Is de routine verandert door de jaren heen?
 - Waarom + wanneer anders gaan doen?
 Rekeningen, andere mensen, zelf bedacht,
 - Vraag herhalen (andere dingen anders?)
- Ben je tevreden hoe je dit nu doet (qua duurzaamheid)? (of zou het eigenlijk beter moeten?) NEE:
 - Hoe zou je het dan beter kunnen doen?
 - i. waarom doe je dat dan niet?
 - ii. of: je denkt dat het beter moet, maar je weet niet hoe?
 - Heb je een doel?

JA:

- Kort antwoord: kan je iets meer details geven waarom je dat vindt?
- Dus geen doel?
- 6) Indien veranderingen routine: Heb je feedback over hoe duurzaam je bent?
 - kan je een inschatting maken van de impact van je verandering?
 - Rekeningen? Vergelijken met anderen? Slechter of beter?

Praten over & observeren van andermans routines: Wanneer & waarom

- 1. Met wie?
- 2. Hoe vaak heb je het dan over zoiets?
 - Zou je de laatste keer kunnen herinneren dat je het hierover hebt gehad?
- 3. Wanneer?
 - Veel voorkomende gespreksonderwerp
 - Af en toe voorkomend ... (doorvragen)
 - Vrijwel niet nooit
 - Niet interessant, of andere reden?
- 4. Doe je op deze manier ideeën/kennis op?

Informatie:

- 1. Zoek je wel eens iets op?
 - Voorbeeld?
- 2. Wat is de reden?
 - Hoe kom je er bij iets op te zoeken?
- 3. Toevallige informatie
 - Welke bronnen?

Categorie specifieke vragen in trefwoorden:

Wassen	 Duurzaamheid aspect (overweging + verandering)
	a) halve was, water laten lopen, lengte, eco-stand
	b) kosten, comfort, gemak
Eten	 Duurzaamheid aspect (overweging + verandering)
	a) uiteten / bestellen
	b) melk/vlees, lokaal, biologisch
	c) Wat is de rol van: kosten, gemak
Producten	1) Duurzaamheid aspect (overweging + verandering)
	a) energie verbruik / keurmerken
	b) online kopen
	c) Wat is de rol van: kosten, gemak
Energie verbruik	(apparatuur, lichten, etc.)
	1) bewustzijn energieverbruik?
	a) lichten uitdoen?
	b) Verwarming/ ramen/deuren dicht?
	c) Nachtstroom, stand-by
	d) Wat is de rol van: kosten, gemak

3) Algemene beeld van duurzaamheid

~note: this part was mostly meant to give information for the mentality model archetypes~

Korte samenvatting van waar we het net over hebben gehad:

- 1) <u>Wel / niet veel / tussenin verandert (samenvattend)</u>
 - a. Recentelijk
 - b. Over langere periode
 - c. wisselend
- 2) Reden van verandering (samenvattend)
 - WEL:
 - a. Nieuws
 - b. Bekenden gesprekken en observaties
 - c. Zelf opzoeken
 - d. Feedback: rekeningen, NIET:
 - a. Comfort / functionaliteit
 - b. Niet mee bezig
 - c. Kennis
 - d. Sceptisch
 - Wat is de belangrijkste barrière voor jou, in het opnemen van duurzame handelingen in activiteiten?
 - o Kennis
 - Feedback
- 3) Rol duurzaamheid in leven (kortere vragen, antwoord hoeft minder uitgebreid)
 - Ben je tevreden hoe je dit nu doet (qua duurzaamheid)? (of zou het eigenlijk beter moeten?) NEE:
 - i. Zou beter kunnen: waarom doe je dat dan niet?
 - of: je denkt dat het beter moet, maar je weet niet hoe?
 - ii. Kun je zelf een inschatting maken van de impact hiervan?

JA:

- iii. Kort antwoord: kan je iets meer details geven waarom je dat vindt?
- iv. E.v.t: kan je een inschatting geven van hoeveel effect dit heeft op duurzaamheid?
- b. Heb je een doel of concreet voornemen wat betreft duurzaamheid?
 - i. Heeft dit bijgedragen?
- c. Hoe kom je aan ideeën of informatie over duurzaamheid?
 - i. Opzoeken informatie
 - 1. Wanneer? Voorbeeld?
 - 2. Waar vind je informatie?
 - ii. Nieuws of tijdschriften + Bekenden
 - iii. Heb je ook feedback?
 - 1. Rekeningen
 - 2. Vergelijk je jezelf ook wel eens met anderen?
 - iv. Ben of was je sceptisch t.o.v. klimaatverandering of duurzaamheid?
- d. Waar ligt de verantwoordelijkheid?
 - i. Individu, bedrijven overheid?
 - ii. Heb je ooit informatie gehad van de gemeente over duurzaamheid?
 - 1. Zo ja: Heb je dat gelezen?
- e. Maak je je zorgen over duurzaamheid?

- 1. Of het de verkeerde kant opgaat
- 2. Of dat het wel goed komt
- ii. Alleen lokaal of ook wel regionaal?
 - 1. (en buiten Nederland?)
- f. Als je een keer iets duurzaams doet, heb je dan het gevoel dat je iets nuttig doet
 - i. Steentje bijdragen aan wereld
 - ii. Of het maakt toch niet uit wat ik doe?
- g. Vindt je duurzaamheid een privé aangelegenheid?
 - i. Zou je anderen er op aanspreken?
- h. Hoe uit duurzaamheid zich?
 - i. Dagelijks = Is het een ideaal?
 - ii. Vooral als je er zelf voordeel aan hebt?
 - iii. Speelt techniek hierin een rol?
 - 1. Groene techniek overweeg je: zonnepanelen, elektrische auto?
 - iv. In gedrag?
 - 1. Zuinig zijn
 - a. Vanuit huis meegekregen?
 - 2. Luxe ook belangrijk?
- i. Wat past beter bij jou:
 - i. Standaard duurzaamheid: beperken energie verbruik, minder vlees etc. Doneren aan een goed doel gerelateerd aan duurzaamheid
 - ii. Creatief (zelf ontwikkelend): een eigen initiatief starten, je eigen meubilair maken..?
 - iii. Beide?
- j. Duurzaamheid tegenover gemak
 - i. Opzoeken/uitzoeken informatie
 - ii. Speelt rol in aanschaf of eigenlijk vooral kwaliteit en prijs?
 - iii. Auto laten staan
 - iv. Opletten in supermarkt
- k. Duurzaamheid tegenover ervaring / carrière / eigen leven
 - i. Vakantie?
 - 1. Iets verandert in hoe vaak, hoe ver, of vliegen?
 - ii. Met werk mee bezig? *duurzaam werk*
 - iii. Stel leuke baan of ervaring, dit niet echt duurzaam is?
 - 1. Zou dit uitmaken?
 - 2. Of niet hele leven aanpassen hieraan?

<u>4. Einde:</u>

Bedankt voor het mogen interviewen. Heb je nog iets wat je zelf wilt toevoegen aan het interview?

Stop opname