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Exploring processes and devices behind consumer purchases of sustainable groceries in a Danish supermarket

Application of Actor-Network Theory to sustainable consumption

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Abstract

This thesis was initiated by the puzzlement that many consumers express a desire to buy sustainable products but fail to show this in their behaviour. In this thesis, I argue that the purchase decision is situated in the shop, and taking provisioning of groceries as a case, this thesis therefore explores how the purchase decision relating to sustainable products is shaped in the supermarket. This is done with a point of departure in Actor-Network Theory (ANT) and its approach to studying market transactions. The ANT approach argues that devices are used to facilitate markets transactions and this thesis therefore explores how devices created by the supermarket and consumers respectively influence the purchase decision.

Data was produced in two rounds. First through two qualitative interviews with representatives from the supermarket franchise Rema 1000, and subsequently through 41 observation-interviews with consumers, consisting of interviewing consumers in the supermarket to simultaneously observe and ask questions about their grocery shopping.

Analysis of the first set of data revealed 5 devices that are used by Rema 1000 to influence sustainable consumption:

1. Placement
2. Product assortment
3. Price tags with certificates
4. Savers catalogues
5. Price and temporary savers

The second set of data revealed that consumers also bring devices of their own to help them in the decision-making process. The most commonly used devices were:

1. The shopping list
2. "Wish lists" from close others
3. Home tests
4. Attitudes
5. Habits

In addition to the devices the consumers brought, they also made use of the devices supplied by the supermarket. The analysis therefore revealed a complex interplay of between devices that are used to facilitate decision-making.

In terms of understanding the purchase decision relating to sustainable consumption the study reveals and discusses the following:

- Consumers use a multiplicity of devices in their purchase decision, and they often combine devices for a single purchase as well as use different devices for different products. The use of devices is inconsistent and unpredictable and relates to product qualities that are negotiated at the product level. This means that those who wish to influence sustainable consumption might also have to work at the product level in order to promote sustainable qualities and related devices for each product category.

- The influence of the devices the supermarket supply is moderated by the consumers' own devices. This indicate that to influence sustainable consumption, it might also be necessary to work to influence the consumers devices, and thus influence decision-making indirectly.

This research provides a peak into the complexity and unpredictability that must be considered by anyone who wish to work with consumers or sustainable consumption.

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1. Introduction

This thesis is motivated by a puzzlement relating to sustainable consumption. Most consumers know that through their consumption, they can contribute to a sustainable development, and many accordingly state they wish to buy sustainable products. But when it comes to act, only little happens and few sustainable products are purchased (Finney, 2014; Thøgersen, 2010). This puzzles me. And others share this puzzlement, actually the phenomenon has been studied and named the "attitude – behaviour gap", referring to the gap between the positive attitudes towards sustainable consumption that consumers voice, and the limited follow-up behaviour they exhibit (Thøgersen, 2011).

One could argue that the attitude – behaviour gap materialises in the shop when the consumer chooses a product and makes a purchase decision. The attitude – behaviour gap tells us that consumers often walk into a shop with a positive attitude towards sustainable products, but come out having bought a non-sustainable product. In other words, consumptions is situated in the shop, and takes place within the framework that the shop has established. I am curious about what happens in the shop, when consumers make their purchase decision, and I wish to explore how the shop and the context is part of shaping the decision making process.

1.1 Problem area

In this thesis I will look closer at sustainable consumption, and inspired by the attitude – behaviour gap, I will focus on the purchase decision as it takes place in the shop. This means that I will explore the situation where intentions turn into behaviour, as well as the context surrounding this specific moment.

One of the most common types of consumption is the provisioning of food and other groceries that takes place when consumers visit the local supermarket to provide for their everyday needs. This implies that a large part of consumers are frequently faced with the choice of whether to choose sustainable groceries, and provisioning is thus an interesting case for the study of sustainable consumption. The "shop" we have to look closer at in order to examine this purchase decision, is the supermarket, where most consumers go to buy their groceries. The supermarket is part of creating the immediate context here, and the influence of the supermarket is therefore a relevant part of the focus area.

The problem area for this thesis therefore revolve around the purchase decision relating to the purchase of sustainable groceries, as it takes place in the supermarket, and how this decision is influenced by the context created by the supermarket.

1.2 Defining sustainable consumption

Sustainability is about showing respect, protecting the planet, making the world less unequal and making sure that a positive development of the world can continue. It is about securing a good livelihood for ourselves, without creating costs and burdens that will have to be paid by others now or in the future (Hildebrandt, 2014). This is in line with the commonly used definition put forward by the Brundtland Commission[1] in 1987, describing sustainability as development that *"meets the needs of the present without compromising the ability of future generations to meet their own needs"* (The World Commission on Environment and Development, 1987, page 16, article 27). Adding to this definition, it now generally understood that sustainability must integrate the three important dimensions of economic sustainability, social sustainability and environmental sustainability (Carter & Rogers, 2008; Herremans & Reid, 2002; Strange & Bayley, 2008).

Parallel to this, **sustainable consumption** has been studied using different names and definitions, and in establishing a definition of sustainable consumption for this thesis, I will build on a range of related concepts that have been applied in academic research. The term political consumption was among the first used labels. The focus here was on consumption based on political values, virtues and ethics, based on the assumption that consumers can create change through the markets by including social, cultural, animal-related and environmental concerns in the consumption decisions (Niva, Mäkelä, Kahma, & Kjærnes, 2014). Another commonly used term is green consumption, which naturally refers to consumption that show concern for the environment. However, the term include an assumption that such consumers are also interested in social and ethical issues (McDonald, Oates, Alevizou, Young, & Hwang, 2012). Additionally, ethical consumption is used as a broad term for when consumers are oriented towards environmental protection and social justice in their consumption preferences (McDonald et al., 2012). To further complicate the issue, the term sustainable consumption has recently been broadened to include concern for personal health and nutrition as well as food security and purchasing through alternative food networks (Niva et al., 2014).

[1] Officially named "World Commission on Environment and Development", the commission is more commonly known as the Brundtland Commission, referring to the Chairman Gro Harlem Brundtland.

In this thesis, my definition of sustainable consumption will take inspiration from the above concepts, as well as build on the above definitions of sustainability. Sustainable consumption will therefore be defined as "consumption that in addition to meeting the needs of the consuming individual includes a broad, long-term concern for society and/or environment". Since each single act of consumption might not be able to include concern for all three dimensions of sustainability, this definition allows me to include acts of consumption that include concern for either society or the environment. This is relevant because such acts, despite not being a 100 % sustainable, show concern and a step in the right direction, and therefore deserve to be included in this study. My definition of sustainability is broad, and much research using other concepts can fit into this. I will therefore include research made using other definitions when relevant.

1.3 Previous research

My thesis is not the first piece of research that examines sustainable consumption or that aims to understand what makes consumers chose a sustainable alternative. As a way to arrive at a more specific research question, I therefore find it useful to briefly consider what researchers before me have, and have not, focused on.

Reviewing academic literature on sustainable consumption quickly show a strong focus on the consumer who engages in sustainable purchases or activities (McDonald et al., 2012; Niva et al., 2014; White & Simpson, 2013; Ölander & Thøgersen, 1995). Looking closer at the literature, it is possible to divide the research into two overall groups, each with a different perspective and starting point for the research. The first group of research aims to identify and describe "the sustainable consumer" (or whatever label has been applied), using a range of objective or subjective factors. The second group of research evolves around the attitude – behaviour gap, and focuses on factors that constrain the consumer from acting on their attitude. In the following section I will elaborate on these two groups of research.

The first group of literature is also chronologically the first to develop. Attempts to describe the "green consumer" started more than 30 years ago, so this group covers a vast amount of research (McDonald et al., 2012). The overall idea behind this focus is that an understanding of who sustainable consumers are, and why they act sustainably, could lead to insights into how to target these consumers and how to make more consumers act sustainably (Finney, 2014; McDonald et al., 2012; White & Simpson, 2013). Common for the group is therefore the assumption that consumers can be divided into two groups, based on whether or not they are sympathetic towards sustainable

consumption. These groups can be termed green and grey consumers, or sustainable and conventional consumers (McDonald et al., 2012).

Identifying the common traits of sustainable consumers has turned out to be quite troublesome, and this group of research has therefore used a range of characteristics as basis, in search of the distinguishing factors. One way of describing the sustainable consumer is by looking at demographic variables, and identify which demographic groups are more engaged in sustainability. Segmenting based on such objective markers, is an attractive strategy because the data is easy to obtain and it is then subsequently easy for marketers or policymakers to target a specific demographic group (McDonald et al., 2012). An example of such an attempt is a study on "Eating Sustainably" in four Nordic countries (Niva et al., 2014). This study uses quantitative surveys and statistical analysis to examine association between sustainable eating habits and the demographic variables of gender, age, educational level and occupational position. The study finds indications that women and the elderly are engaged in more sustainable consumption activities, than their male and younger counterparts (Niva et al., 2014). Another example of this line of research is studies that compares attitudes to sustainable consumption across countries. Micheletti and Isenhour (2010) discuss studies of political consumerism, and find evidence that Nordic consumers are more engaged in political consumption than consumers in the United States and most other Western European countries (Micheletti & Isenhour, 2010).

Research focusing on demographic characteristics has produced inconsistent and inconclusive evidence, and it has so far not been possible to give a clear and consistent picture of the sustainable consumer. This group of literature therefore also contains studies that attempt to understand the sustainable consumer through more complex, subjective markers such as behaviour and attitudes (Finney, 2014; McDonald et al., 2012). Behavioural constructs have been used to describe sustainable consumption within a context of sustainable lifestyle, examining a range of activities respondents engage in (Gilg, Barr, & Ford, 2005; McDonald, Oates, Young, & Hwang, 2006). Attitudes have been examined for instance in terms of how sustainable consumption is related to perceived consumer effectiveness (Peattie, 2001; Straughan & Roberts, 1999), or attitudes to being politically active in other arenas (Boström & Klintman, 2009; Tobiasen, 2005). Furthermore studies have examined how sustainable consumers also show broader ecological or environmental concerns (Fraj & Martinez, 2007; MacMillan Uribe, Winham, & Wharton, 2012), or a general concern for healthy eating (Magnusson, Arvola, Hursti, Åberg, & Sjödén, 2003; Niva et al., 2014).

The second group of literature has focused on the attitude – behaviour gap. The attitude – behaviour gap refers to the fact that consumers often say they wish to purchase sustainable products, but this intention is not turned into actual sustainable purchases. This group of literature takes point of departure in this gap and try to explain it by identifying constraints and barriers that limit consumers from being able to act on their intentions.

A contribution to this line of research is the Motivation – Ability – Opportunity – Behaviour (MAOB) Framework, outlined by Ölander and Thøgersen (1995) and Thøgersen (2010). The framework focuses on understanding the determinants of consumer behaviour, and aims to be a framework that can encompass previous studies on consumer behaviour with environmental impact (Ölander & Thøgersen, 1995). Based on review of previous literature, the authors argue that the attitude-behaviour gap exists because behaviour does not depend solely on the actor's free choice, but has three main determinants; motivation, ability and opportunity. This gives a framework for understanding consumer behaviour based on 4 categories: Motivation, Ability, Opportunity, and Behaviour. In this model, the relationship between motivation and behaviour is moderated by ability and opportunity. The categories opportunity and ability focus on internal and external factors that facilitate or obstruct the link between motivation and behaviour (Thøgersen, 2010; Ölander & Thøgersen, 1995).

Another example of such literature is a study by Vermier and Verbeke that explores why positive attitudes towards sustainable food products do not translate into intensions to buy the products. Vermier and Verbeke examines involvement, perceived availability, certainty, perceived consumer effectiveness, values and social norms, to determine their influence on attitudes and intention to buy. The study is similar to the MOAB framework, and that many of the variables examined are factors that are also included in the MOAB categories. The conclusions are also similar, in that Vermier and Verbeke conclude that low perceived availability is constraining intention to buy, and that all the variables mentioned are relevant for the stimulation of sustainable food consumption (Vermeir & Verbeke, 2006).

1.4 Research gap and research question

Overall, the review of literature shows a focus on the consumer and the intrinsic determinants of behaviour. There is an underlying assumption that these intrinsic determinants leads to a consistent behaviour. This assumption is seen in the first group of literature in the expectation that consumers behave either consistently sustainably or consistently "non-sustainably", and that the sustainable

consumer can therefore be identified and described. In the second group of literature, the assumption is seen by the similar expectation that intrinsic determinants as a general rule lead to consistent behaviour, and the attitude – behaviour gap is therefore an exception that needs to be explained. Extrinsic aspects and the context surrounding the consumer in the purchase decision have not received similar attention. This means that the physical context and the work carried out in and by the supermarket or other shops, have not been included. Similarly, the final choice between similar products on the supermarket shelf has not been included, because of the expectation that the consumer behaves consistently, and that the purchase decision has therefore been made in advance. The above literature review thereby identifies a gap in the literature on sustainable consumption, in the form of a lack of literature on how the purchase decision is influenced in and by the shop.

This thesis aims to contribute to the literature by addressing this gap in the literature on sustainable consumption, by addressing the purchase decision and its context more specifically. I therefore broadened my literature review to look for theories and studies that can help me in dealing with this gap. In this search, I have identified consumer studies relating to Actor-Network Theory (ANT). Within this line of theory, studies are focusing on how material tools, conceptualised as devices, shape the products and context in the shop, and interact with the consumer in the purchase decision. My contribution to the academic field of sustainable consumption will therefore be to apply perspectives from ANT, in order to shed some light on the devices that are utilised by supermarkets and consumers, and how these devices shape the context and the purchase decision.

This leads me to the research question for the thesis:

- **How is the purchase decision relating to sustainable consumption shaped in the supermarket?**

In order to explore this I will focus on the following sub-questions:

- **What devices can the supermarket apply in order to influence consumers towards more sustainable consumption?**
- **How do consumers utilise devices in their decision-making?**
- **To what extend are the devices supplied by the supermarket able to influence the consumer towards more sustainable consumption?**

Sustainable consumption is part of consumption in general, and I therefore have to explore consumption more generally in order to understand how sustainable consumption is shaped in the supermarket.

1.5 Purpose

In answering the above research question this thesis aims to shed some light on the role played by the supermarkets in relation to sustainable consumption. The purpose is to create knowledge about the context surrounding sustainable consumption, which can potentially be utilised to encourage consumers to purchase more sustainable products. This knowledge could be relevant for supermarkets that as a part of their strategy, wish to influence consumers towards more sustainable consumption patterns. It could furthermore be relevant for organisations and policy makers who work to promote sustainable consumption, particularly if they wish to engage with supermarkets in such an attempt. So far, numerous organisations have focused on sustainability in production and on persuading consumers to take a stand, however, limited focus has been given to linking consumers and producers. The purpose of this thesis is to turn focus towards this link by focusing on the supermarkets and the devices that are part of linking consumers and producers through market transactions.

1.6 Delimitations

For the purpose of this thesis, the focus revolves around consumers' purchase decision and whether they want to buy sustainable products. What matters here is whether and how consumers take action to behave sustainably through their consumption. I will therefore not go into discussions of to what extent different products contribute to genuine sustainability, or how different sustainability certificates are monitored, as these are questions of their own, and focused at different places in the consumption chain. This also means that the project is based on the assumption that sustainable consumption is a good thing that we seek to promote. Even though responsibilities for sustainable development also lays elsewhere, for instance with politicians and producers, this project will only focus on a small section of sustainability through a focus on consumers and supermarkets.

The choice of Actor-Network Theory implies a focus on facilitating in-depth understanding of the specific situation. This project will therefore focus on understanding the purchase situation as it takes place in one supermarket, a Rema 1000 in Copenhagen, and will not attempt to make generalisations about sustainable consumption. The objective is instead to provide an example of how sustainable consumption can take place and how devices can be applied by actors and analysed by researchers. The choice of ANT also means that I aim to explore the phenomenon based on empirical data and

without a pre-defined theoretical framework, and I will therefore not use marketing literature as a foundation for this project.

1.7 Structure of the thesis

After this introduction to the research topic and existing literature, section two will provide the reader a brief introduction to Actor-Network Theory, and an outline of how this approach works with issues relating to market transactions and consumption. Section three will subsequently discuss the methodology applied in this project, giving special attention to the combination of observation and interview applied in data production. After that two separate sections of analysis will follow. Firstly, section four will focus on the supermarkets point of view, through an analysis of the devices used by the supermarket Rema 1000. Subsequently section five will focus on the consumer point of view through an analysis of the devices utilised by consumers in the purchase decision. To elaborate on the two sections of analysis, section six will contain a discussion of the findings and points of interest, before section seven provides the concluding remarks. Bibliography is presented in section eight and section nine presents a list of the appendices that can be found at the USB drive.

2. Actor-Network Theory

This thesis is based on perspectives and concepts from Actor-Network Theory (ANT), because ANT provides an angle that is different from most other studies of sustainable consumption. ANT offers an alternative way to look at society, and thereby an alternative way to analyse phenomena in society. ANT sees society as a complex and constantly evolving network, where humans, material things, knowledge and all other thinkable actors constantly interact to advance their interests. This conception of society draws our attention to the importance of including material things, as they interact with and influence humans, and the importance of understanding the process through which a given situation has been reached. ANT therefore enables me to examine the material context surrounding the purchase decision in the supermarket, as well as the processes behind the purchase decision.

This section gives an introduction to ANT and its theoretical standpoints in general, as well as a short review of the branch of ANT that has focused on market transactions and consumption. This should help the reader understand the perspectives applied in the following analyses, as well as why ANT is a useful point of departure for this project.

2.1 ANT as a philosophical standpoint

ANT, or rather the way of thinking and way of doing things that it represents, forms the starting point for this project. I say this because ANT is not a theory in a traditional, academic sense where a theory is a formulation of a relationship between variables (Ingemann, 2013a; Saunders, Lewis, & Thornhil, 2009a). ANT is critical to the traditional use of theory and its attempts to fit phenomena into theories and frameworks (Egholm, 2014). ANT is more a particular way of approaching a phenomenon, and I will henceforth refer to ANT as an approach.

ANT is a philosophical standpoint, in the sense that ANT is based on a range of ideas and assumptions that can be used to guide the way a researcher looks at phenomena, as well as which aspects are included in analysis, and what questions are asked. In that sense, it could be argued that ANT is a methodology, and it is also often described as such (Latour, 2006). However, since ANT does not describe in detail how to conduct research, I will save the term methodology for these more specific considerations, and instead refer to ANT as an approach.

2.2 Key points in the ANT approach

Since ANT is not a specific theory but rather a way of thinking, it is quite complex to give a brief overview of the approach. ANT is not a defined school and there is no single author who can, or will, claim ownership of the concepts and/or define its content (Brødsgaard, 2005; Egholm, 2014). However, a few authors have been highlighted, and there is little doubt that Bruno Latour, John Law, and Michel Callon are among the key figures in shaping ANT approach (Brødsgaard, 2005; Egholm, 2014). ANT grew out of Science and Technology Studies, and studies of how scientific facts emerges and how science influences society (Egholm, 2014; Latour, 2006). From there the perspective has been applied in many different ways to a wide range of areas from organisational studies over medicine to economy, and today most social science disciplines find inspiration from ANT (Egholm, 2014). A few central tendencies form the core of the ANT approach, and I will here outline these in turn.

1. The network metaphor

As many other social theories and perspectives before it, ANT focuses on society and aims to describe the nature of society. ANT introduces the network as a metaphor for the study of society, and studies society through elaborate description of relations and connections. ANT argues that society cannot be described by the common metaphors such as layers or dualisms as e.g. micro versus macro level or culture versus nature. Instead, to understand society, it is important to *"think of points that have as many dimensions as they have relations"* (Latour, 2006, page 209, my translation). It is important to emphasise that in ANT the term *network* refers to interdependence and interconnectedness, where the actors flow into one another and develop together. Consequently actors are no different from the network, as each actor is in itself a network, but a network that has reached some level of stability (Brødsgaard, 2005). It is therefore a central assumption of ANT that all phenomena can be studied by focusing on their emergence via networks and associations (Egholm, 2014).

The network metaphor can help me shed light on some hitherto understudies aspects of sustainable consumption, and answer calls from scholars to place consumer studies in context (McDonald et al., 2012). As outlined in the literature review, consumer studies have focused on the consumer, with limited consideration of the context of consumption. With the network and its emergence as a central focus point in ANT, it follows that a study of consumption has to include a broad range of contextual

factors, and ANT can therefore be a way to overcome some of the limitations of earlier consumer studies**.**

2. **Inclusion of non-human actors**

In its study of society, the ANT approach distinguishes itself from other perspectives through a focus on non-human actors. This is done to expand the scope of analysis to include material things, nature, society etc. (Egholm, 2014; Latour, 2006). In ANT "actor" refers to *"something that acts, or gains activity from others"* (Latour, 2006, page 214, my translation). This means that actors can be anything that is, in one way or the other, the source of action. Put differently, humans are not the only important actors, because humans do not act alone, but rather in interaction with other (non-human) actors. This also means that the actor may or may not have particular motivation or intentions of its own, since the focus is on actions and not on intentions (Egholm, 2014; Latour, 2006).

The inclusion of non-human actors makes ANT relevant for my study, because it allows me to include actors that have previously not been included in studies of consumer behaviour. According to ANT, the consumer engages in interactions with contextual actors surrounding the purchase, and is therefore influenced by the surrounding (non-human) actors when making the final purchase decision. As shown in the literature review, significant research has been done on the consumer, and what goes on in the consumers' mind, but research including the material context in the supermarket is less developed. ANT thus gives an opportunity to explore that area further, by highlighting the importance of including material objects, such as price tags, product shelves and shopping lists in the study of consumer behaviour.

3. **Focus on processes rather than end products**

The ANT approach focuses on unravelling how a certain structure or situation has been reached, and the processes that have gone into establishing it. The structures being unravelled have e.g. been scientific fact or "truth", and how certain facts have come to be accepted as the truth, as well as how things, people, rules or values have been formed as they are in a given situation. An example of this is the work by Latour, who often focuses on how scientific facts become accepted as truth, through an analysis of the processes that went into establishing this fact as "truth". This is for example seen in the seminal book "Laboratory Life: The Construction of Scientific Truth", which outlines processes such as routine lab practices and publication of scientific papers, and how these processes together establish scientific truth (Brødsgaard, 2005; Egholm, 2014).

For my thesis I find this focus relevant, because the focus on processes allows me to focus on the processes and actions in the supermarket that leads to the purchase decision. The outcome, in terms of the amount of sustainable products purchased, has been studied elsewhere, so the focus of my study is not on the end result. Rather I find the processes influencing the purchase decision to be more interesting, and therefore the ANT focus on processes is useful.

The focus on processes also means that ANT examines the phenomenon at a point in time where nothing has been determined yet, and all outcomes are still possible (Brødsgaard, 2005). This makes it useful for the present study, as it can potentially shed light on some of the unexplained factors leading to the attitude – behaviour gap. Many studies of consumer behaviour focus on consumers' motivation and attitudes, which would imply that the purchase decision is made before the consumer enters the shop. This point of view therefore has difficulty explaining the attitude – behaviour gap, but since ANT examines processes in a situation where outcomes are not yet established, ANT gives an opportunity to shed new light on this.

4. **No preconditions**

ANT does not establish premises or assumptions in advance. ANT wishes to break free from the established Western academic way of thinking with its focus on dualisms and underlying frameworks. The real world is never 100% one thing, so the way of thinking with dichotomies and dualisms, can never adequately capture the real world. The focus on fitting phenomena into theories and underlying frameworks therefore includes the risk that elements that contradicts the established framework will be excluded or deemed irrelevant. Instead ANT focuses on following the actors in the network, and base research on empirical observations and descriptions (Egholm, 2014).

This point of ANT relates to how to conduct research, and for my research it means that ANT encourages me to be open to what the empirical data reveals and to build my research on empirical data rather than on pre-established theory. Since this aspect is directly related to the more specific methodology applied in the research, I will elaborate on what this means for my research in the following methodology section.

5. **Good description is the best explanation**

When applying ANT, the description of the case and the explanation of the phenomena are not separated. Because an explanation is the connection between different actors, ANT argues that a good description of a network and its relations is the best possible explanation. This means that for ANT researchers, the best way to examine phenomena is to focus on the actors and their relations, and the actors will then provide the explanations, as these explanations are part of the workings of the network (Latour, 2006). In order to do that, ANT researchers apply methods that are inspired by anthropologists and their use of ethnography (Brødsgaard, 2005; Egholm, 2014).

This has direct implications for how research is conducted and how knowledge is presented, in that it highlights description of a case as an appropriate way to conduct research. For this thesis, I have therefore chosen a case approach with a specific focus on the context and purchase decision in one specific supermarket, in order to be able provide a detailed description of this specific network. Furthermore, this aspect of ANT emphasises ethnography as a way of conducting research, and in the methodology section, I will elaborate how I have developed my approach to ethnography for this research.

6. Generalisability

ANT argues that networks are unique, as each network has its own origin. Networks should therefore be studied in their own right, and the study and description of a network cannot be used to form generalisations about networks in general. This leads to ANTs pragmatic concept of truth and requirements for how truth is established. For ANT the criteria for "truth" is that the description and its results can help explain the phenomenon studied, and knowledge thus does not have to be generalizable to be true (Egholm, 2014).

This has influence on how data is produced and analysed, because it implies that the researcher cannot rely on knowledge from other studies, but has to focus solely on the network and data of the present study. This is consistent with point 4 above, about entering the research without preconditions, and with point 5 about focusing on describing the case. The advantages of this approach are that it allows the researcher to be open to the situation without being biased by earlier studies, and that it becomes possible to include all aspects of the situation, and not only those aspects that fits into general tendencies or universal rules.

However, this ideographic focus also brings some limitations to the research and its results. Most importantly, it is obvious that when the results of a network study cannot be generalised to other

networks, the description and explanations developed have a more limited value and applicability for other settings. Furthermore, it describes a more difficult research setting, because it becomes more difficult to learn from others, and build on their results. For my study, I find that the advantages in terms of being able to understand the network at hand outweigh the disadvantage of not being able to create generalizable statements. I will get back to this in the discussion of findings in section 6. Discussion.

2.3 The ANT approach to market transactions

The ideas in the ANT approach have been applied in different ways to a great range of topics, but what is most relevant for this study is the way they have been applied to studies of products and markets transactions. A key contributor to this line of work is Michel Callon, who, in collaboration with other authors, has published a series of articles outlining the ANT way of understanding markets. This perspective on markets will guide the empirical work and analysis of this thesis, and is therefore outlined in the following section.

ANT takes point of departure in the individual transaction rather than the overall market, and is thus critical to the neoclassical way of viewing markets. The neoclassical understanding of markets outlines how the market is an abstract space where supply and demand meets. The neoclassical market forms an overall structure of impersonal laws, within which the meeting of supply and demand easily, and almost automatically, leads to the definition of a market price and individual transactions take place. These transactions takes place because human actors are by nature able to calculate and arrive at the optimal outcome (Coase, 1988). According to Callon and Muniesa (2005), this view of the market is problematic because it is a very abstract conception of the market, and has led to a situation where concrete markets are invisible and seldom studied. Instead ANT argues that a series of structures and devices are necessary to enable transactions to take place, and to enable human actors to calculate. Markets are therefore not automatically there - they are created. Callon and Muniesa propose to take the opposite perspective and place the individual transaction in focus, and examine how individual transactions are made possible (Callon & Muniesa, 2005).

2.3.1 Products as variable – qualification and singularization

A central point in the ANT view of the market is that products[2] are variable. Variable in the sense that their qualities are not fixed, but constantly negotiated and adapted in co-elaboration with surrounding actors (Callon et al., 2002). A product in a market transaction is a bundle of qualities that represents a value to the buyer (Callon & Muniesa, 2005). Let us take the example of an apple. Even though it seems like a simple product, an apple has many different qualities, for instance freshness, look, taste, country of origin, nutritional value etc. The qualities of a good cannot be directly observed, they have to be revealed through tests or others trials, in which economic actors interact with the good. This is not simply a process of providing information about the good, since agreements on qualities can be difficult to reach in terms of for instance which qualities should be measured, how they should be measured, and how they should be weighed against each other (Callon et al., 2002). Some would think the taste of the apple is the most important, while others would focus on whether it is a local product or produced organically. The apple as a product is variable because the product offered to the consumer depends on which qualities are measured, how they are measured and how they are prioritised. Since these qualities are created through the way they are revealed and the tests they are put through, the qualities are variable and constantly negotiated. This ongoing process is referred to as qualification and re-qualification of products (Callon et al., 2002).

The qualification of products is guided by mutual adaptation and negotiation between supply and demand, and focuses on linking the two sides. In order for supply and demand to meet, the product qualities offered, must match the product qualities demanded, and the adjustment between supply and demand is thus formed around the qualities of products (Callon et al., 2002). More specifically sellers attempt to create products that have the qualities that are demanded, but at the same time demand, e.g. consumer preferences, can also be changed when they experience the qualities a seller supplies. This is a constant process of adaptation and negotiation, where the qualities of products are shaped by needs and evaluations from the demand side, as well as actions and promotions from the supply

[2] Callon et al makes a distinction between product and good. In their article the term product highlights how products are the result of production and therefore emphasises the process of transformation. Good on the other hand refers to a specific state in this process, where the qualities of the good are temporarily stabilised, and the good has established a value and a position in the market (Callon, Méadel, & Rabeharisoa, 2002). However, for simplicity I will use the terms interchangeably, and not go further into this distinction.

side. Qualification is therefore at the heart of the ANT view of the market, because it is the process that bridges supply and demand (Callon et al., 2002).

The qualification process takes place at the product level, where the product through its entire life-time is constantly requalified to create a close relationship to what the individual consumer wants (Callon et al., 2002). If for instance consumers want nutritious food, tests that reveals the nutritious qualities of apples will have to be developed, and the seller[3], for instance the supermarket, can emphasise this quality through signs or certificate as well as place the apple together with other healthy products. Throughout the life of a product sellers constantly use qualification and re-qualification to singularize their products, so each product distinguishes itself from other goods and satisfies consumer demands in a way other goods cannot. For the sellers the goal is to meet the consumer's demands so the consumer becomes attached to the product and buys it. Competition between sellers take place when other sellers simultaneously try to qualify their products in a way that detaches the consumer and attaches him to their products. On the other side of the process, consumers are active in qualification when they compare and relate a product to other products, thereby classifying, evaluating and judging a products and its current qualification (Callon et al., 2002).

Sustainable products are an example of how qualification can alter the qualities of products and position products in the market. Sustainable products are not visibly different from conventional products, which means that particular work must be done to position these products as something different. The concept of qualification highlights that the list of qualities that can be associated with a product is almost endless, and which qualities to include in the description of the good is an important part of the negotiations. Sustainable qualities, such as being organic or sourced through fair trade schemes, have not always been seen as relevant product qualities, since they have not always existed. Such qualities do not appear on their own, they are a result of a lengthy qualification process, where the first step is to open the list of qualities and introduce new concepts of quality into the debate.

Sustainable products are also illustrative of how qualities are not simply observed, but negotiated and revealed through a lengthy process. A common way of revealing sustainable qualities is through the

[3] The term seller refers to a collective of actors on the supply side and includes designers, producers, sales persons etc. (Callon & Muniesa, 2005).

utilisations of standards and certificates such as the red "Ø" for organic products or the fair trade certificate. Before products receive such certificates, each certificate has been through a long negotiation process in order to reach agreement on what should be measured, how it should be measured etc. (Ingenbleek, Binnekamp, & Goddijn, 2007). When that is established, all products must be measured against these criteria to qualify for the certificate. Finally, the certificates must be communicated to consumers, because only when consumers are aware of the certificates can they be used to requalify the product, and create a products that is relevant for consumers.

2.3.2 Reaching a market transaction – calculation

Another central concept is calculation, which is the process in which actors compare products and reach a conclusion about the qualities and value of a product. Through the process of qualification outlined above, the products have been classified, which make them calculable, so they can form the starting point for the consumer's calculation. It is important to note that calculation does not refer to a purely mathematical, numerical operation. In the ANT approach, it is unnecessary to distinguish between calculation and judgement, or quantitative and qualitative factors, because actors perform comparisons based on a combination of calculation and judgement. Calculation is a three step process: Firstly, entities for comparison are chosen, isolated from their context and placed next to each other in a way that makes it possible to compare them. Secondly, the entities are compared and classified. Thirdly, a result is reached leading to a new description of the entities, which sums up the result of the comparison (Callon & Muniesa, 2005).

Markets are effective because they provide devices that enable economic actors to calculate and thereby reach compromises on the qualities as well as the value of goods. Individual markets differ because the configuration of devices that enable calculation differ across markets (Callon & Muniesa, 2005). The supermarket is an example of a configuration of devices, because the supermarket organises the encounter between the actors in the market through a set of conventions about how transactions should take place. The supermarket enable calculation for instance by gathering products from different sellers and placing them on shelves next to each other so it is possible for consumers to compare them.

2.3.3 Devices

Product qualification and calculation are ongoing processes that are essential for the functioning of markets, and these processes do not occur automatically. An important focus point for understanding markets is therefore how these processes are enabled. This brings us to the concept of devices, because

devices is the concept used to describe the various tools and mechanism that are created to facilitate market transactions. The study of devices is therefore a way to study how products are qualified and how calculation is enabled, by studying the specific tools used in these processes (Muniesa, Millo, & Callon, 2007). In this project, I will apply this approach and use the study of devices as a focus point for describing and understanding the processes relevant for sustainable consumption in the supermarket. In this section I will therefore use the literature to develop a foundation for how devices can be applied in my research.

According to Muniesa et. al. (2007) devices are material or discursive assemblages. This means that devices can on the one hand be very practical, material tools such as price tags that facilitate transactions by providing visible information that enable comparison of products. On the other hand, devices can also be immaterial, more abstract things such as rules or routines that a consumer sets up in order make it faster to perform calculations. Humans are not by nature able to perform calculations about products in a market transaction, and we can think of devices as the tools that assist humans in the calculation, and thereby enable humans to calculate. Devices can therefore be described as objects with agency, because they act or make others act (Callon & Muniesa, 2005; Muniesa et al., 2007).

The concept of devices has been applied to studies of supermarkets by Cochoy, and his works are therefore a source of inspiration for advancing the theoretical understanding of devices into a practically applicable concept. Cochoy has studied the work of the distributor and how the employees in the supermarket shape the context that meet customers in the supermarket. This included studying devices such as overhead information boards, shelf signs and packaging (Cochoy, 2007). In addition to the devices provided by the supermarket, the consumers bring devices from their life outside the supermarket. Such devices can be pre-established ideas of which products to purchase based on tests and evaluations of previously purchased products. Or it can be a simple aid in the form of a grocery list, which helps consumers organise their shopping and synthesises preferences and lessons learned before going shopping (Cochoy cited in Callon et al., 2002; Cochoy, 2008).

From the above scholars and articles, I have arrived at two working definitions of devices that will be applied in my research. My work will focus on understanding how supermarkets shape the context and how sustainable products are qualified by the supermarket. Inspired by Cochoy I will for this purpose define devices as **"things the employees of the supermarket can manipulate to influence qualification of products and the consumers' calculation".** I will also examine how devices aid consumers in their calculation of whether to choose the sustainable alternative. For this purpose, I

will define devices as "**tools the consumers use to reach a purchase decision through a calculation of which product best matches their needs"**. The two definitions can include the same devices, however, since I intend to identify and describe devices from opposite perspectives, two definitions are required.

In my definition and application of the terms devices and calculation, I allow myself a degree of freedom and broaden the terms to include more aspects than are included in traditional ANT views. I do this because I take point of departure in my empirical data and wish to include all the aspects that are relevant for consumers. This approach is not new in the literature, and inspired by Cochoy who similarly broaden the ANT concepts by introducing the terms "qualculation" and "calqulation" referring to inclusion of qualified elements and collective aspects of consumer choice respectively (Cochoy, 2008).

3. Methodology

The methodology behind this thesis is influenced by the choice of the ANT approach, as the ANT approach is in many ways a methodology outlining how to view a topic, and how to conduct research to understand this topic. In this section, I will describe specifically what that has meant for my research as well as how data has been produced and analysed.

3.1 Philosophy of science

The ANT approach is critical to the Western academic tradition of describing things through dualisms, and is consequently difficult to place within a framework for philosophies of science, because it contains elements of both idealism and realism. The ANT approach can be placed within idealism because ANT does not aim to discover a universal truth (Egholm, 2014; Ingemann, 2013b). As described in the theory section, point 6 about generalisability, ANT argues that networks are heterogeneous and a study of one network cannot form the basis for generalisations. The criteria for "truth" is therefore whether results can contribute to the understanding of a given topic, and not whether they can provide grounds for generalisations (Egholm, 2014). I will therefore in this project not look for generalizable truths, but choose a case study approach with the aim of producing knowledge that can contribute to understanding the specific network present in my case study.

ANT is also idealistic in its view of the researcher as a participating actor in the world she studies (Ingemann, 2013b). The philosophy behind ANT is based on the understanding that the network cannot be described by a person outside the network. The network does not exist separately from the act of describing it, and the network will always be ordered, described and registered through an actor and this actor's definition of the world (Latour, 2006). For ANT there is therefore no requirement for objectivity and ANT acknowledges that science can never be value free (Egholm, 2014). Instead of attempting to create value free research, I therefore acknowledge that my research focuses on the promotion of sustainable consumption, and is based on values that are positive towards sustainable consumption. I further acknowledge that this philosophical standpoint means that I will in my research *produce* data, as the data does not exist separate from my act of producing it. This means that the trustworthiness of my research should not be judged in terms of validity and reliability as quantitative and realist research, but in terms of the rigorousness of the applied methodology (Liamputtong & Ezzy, 2005).

At the same time, ANT is critical of certain aspects of idealism, or more specifically of constructivism and its relativistic position. ANT therefore incorporates elements of realism, because ANT aims to

study the world as it is, in both a constructivist and a realist sense. This means that ANT does not see the contradiction between what is real and what is constructed, rather ANT argues that the more carefully constructed things or truths are, the more real they become (Egholm, 2014). For my project, this means that I will focus on how supermarkets and consumers create reality through the use of devices, rather than on how products are constructed or perceived.

3.2 Starting point for the research

For the ANT approach, it is important to start with an open mind, and investigate the phenomenon on its own terms. I therefore chose to conduct my research without a pre-established theoretical framework, other than the ANT approach. As I am studying consumer behaviour and the influence of the supermarket, I am well aware that marketing literature has much to say about the topic, and has a range of theories that could be relevant to apply. Furthermore the individuals working in the supermarket have their own theoretical background, which gives a foundation for their work. However, following the ANT approach, I base my research on the empirical data instead, and only consider established theories or concepts as far as they appear in the data. I do this in order not to be biased by established theories, and to be open to understand the phenomenon at hand, as the empirical data reveals it.

Starting without preconditions means that the research started without having established that the focus of the analysis would be on devices. When conducting the first round of interviews, I was therefore looking openly for structures in the network that could be used as a reference point for analysis. Through the interviews with representatives from the supermarket, I realised that devices could be used as a reference point. Devices thereafter came to guide the analysis of the data, as well as the production of data in the second round of interviews.

Sustainable consumption is part of consumption in general, and since I wish to examine the purchase decision where consumers choose whether to purchase sustainable or conventional products, the connection to consumption in general is even closer. In order to gain an understanding of all the relevant devices in this calculation, I therefore decided to examine devices used in the consumption of groceries in general. Especially in studying devices used by the consumers it was necessary to broaden the focus, as focusing narrowly on sustainable consumption would risk creating a bias in the data production. The focus will return to sustainable consumption specifically in the discussion section of the paper.

3.3 Data production

In order to gain a holistic understand of the topic, I found it necessary to conduct research on two actors, namely the supermarket and the consumer. Data on the supermarket was produced first in order to gain a deeper understanding of the topic and establish a frame of reference for the project. Subsequently, and partially built on knowledge and findings from the first interviews, data on consumers was produced.

3.3.1 Data production on the supermarket point of view

The objective with the first round of data production was to examine how the supermarket see their role, as well as whether and how they try to influence the purchase of sustainable products. I was therefore looking for thoughts and perspectives on sustainable consumption, as well as what is done in the supermarket to promote sustainable consumption. I chose to contact the supermarket franchise Rema 1000, because this chain has shown interest and creativity in terms of sustainability, most notably through an effort against food waste in collaboration with the NGO "Stop Wasting Food", for which Rema 1000 received the Partnership Prize at the Danish CSR Award in 2013 (csrfonden.dk, 2013; retailnews.dk, 2013). It therefore seemed likely that Rema 1000 would have given some thought to their role and influence in terms of sustainable consumption.

Given that my research is of exploratory nature and conducted without a pre-established framework, I found it suitable to conduct open-ended, qualitative interviews. This would allow me to ask open questions to gain an understanding of how Rema 1000 sees the situation, while being able ask additional questions about relevant topics when they emerged. A limitation of this approach is that I would only be able to talk to a limited number of people, and then rely on their knowledge and opinions (Saunders, Lewis, & Thornhil, 2009b). Talking to the right individuals, who are close to the situation is thus important, for being able to produce rich and detailed information. I chose to interview Anders René Jensen who is head of CSR for Rema 1000 Denmark, and thus responsible for the overall strategy within the franchise for everything relating to sustainability. Given that Rema 1000 is a franchise with independent shop owners, I also chose to interview Christian Vindfeldt who is owner and manager of a Rema 1000 grocery store in Copenhagen. These two individuals are both close to the action, and with their different focus on overall strategic planning and practical, day-to-day operations respectively, they would be able to provide me with a broad range of information about sustainable consumption from Rema 1000's point of view.

The interviews were conducted based on question guides containing a range of questions, most of which were open and intended to give the respondents room to voice their inputs and opinions. The question guides contain some similar questions, for instance about how Rema 1000's focus on sustainability is visible to consumers when they enter the shop. In addition to that, the question guides contain questions that were adapted to each respondent, so Anders René Jensen was asked questions about the overall visions and guidelines for the chain, while Christian Vindfeldt was asked about how sustainability influences the everyday routines at the shop floor. The question guides for the interviews can be found in appendix 1 and 2. The interviews were recorded and subsequently transcribed for further analysis, the interview transcripts can be found in appendix 3 and 4. Both interviews were conducted in Danish, and all quotes used in this report are therefore my translation of their words to English.

The interviews with Anders René Jensen and Christian Vindfeldt were used in the first analysis of how the supermarket work with the promotion of sustainable products. This analysis led to the identification of five devices that Rema 1000 applies in their attempt to influence the consumer's purchase decision. These devices were subsequently used as an empirically based foundation for the second part of my research on the consumers' point of view.

3.3.2 Data production on the consumer point of view

The identification of devices used by the supermarket came to guide the production of data on the consumer perspective in two ways. Firstly, it was now clear that the data production should focus on devices. Secondly, research on the consumers' point of view provided an opportunity to test consumers' responses to these devices. Data production therefore had to include the devices identified by the supermarket and simultaneously provide opportunity to reveal additional devices relevant for the consumer.

Researching consumers brings with it some methodological challenges, not least because of the attitude – behaviour gap, which shows that when it comes to sustainable consumption, consumers often say one thing and do another (Thøgersen, 2010; Niva et al., 2014). This means that simply interviewing consumers about their consumption habits might not provide reliable results, and I therefore went searching for other ways to conduct research on consumer behaviour. ANT scholars have often taken inspiration from anthropologists and the use of ethnography (Egholm, 2014), and this inspired me to consider observations in the field. Additionally, I found the research conducted by Daniel Miller in his book "A Theory of Shopping" to be of interest (Miller, 1998a). For this book,

Miller conducted research over a one-year period by closely following a group of consumers in North London when they went about their grocery shopping, as well as with conversations with these consumers. Miller's research is of interest to my project, because he combines the conventional interview with observation in the supermarket, and he is therefore able to observe and talk to people during the activity that he studies. Since my focus is on the material devices present in the supermarket and the processes involved in the purchase decision, conducting research at the setting would allow me to get closer to the topic, than had I engaged with consumers outside the supermarket. Even though I am not replicating Miller's study, I can therefore use his methods as inspiration.

I learned more about this way of conducting research from Czarniawska (2014), who calls the technique shadowing. Czarniawska defines shadowing as *"following selected people for a time in their everyday occupations"* (Czarniawska, 2014, page 44), and see it as a branch of non-participatory observation. The work of Czarniawska helped me to consider the advantages of disadvantages of using shadowing as a research method. The obvious and practical advantages are that it allows me to move with the respondents as they go along with their activities, and that it can be aided by photography and sound recording. Furthermore, a challenge in studying consumer behaviour is that many things in the human mind happens unconsciously and the respondents might not be aware of why they do certain things. So even though I do not claim that I as an observer can know better than the actor, observers can see different things from what the actor sees, and shadowing can thus complement interviews with the actor (Czarniawska, 2014). Finally, shadowing and others forms of ethnography have often been applied in consumer studies, as seen in the study by Miller, which shows that it can be appropriate for the topic (Czarniawska, 2014; Ekström & Brembeck, 2004)

A few criticisms of shadowing have also been raised. Firstly, there is a risk that the observer might not understand what is taking place. This particularly relates to the study of respondents during their specialised occupation. As I study grocery shopping, a simple task that I am familiar with, in a cultural setting I know, I find that this risk is not an obstacle for my study. Furthermore, I am during the observation going to ask questions, which can help shed light on unknown processes. Finally, getting to understand the situation better, is exactly the objective of the research, and if I did understand everything in advance, there would be no reason to conduct the research. A second potential problem is the risk of invoking a Hawthorne effect, i.e. the risk that respondents alter their behaviour because they are being observed. As my shadowing includes asking questions during the observed activities, it is to be expected that my shadowing will lead to increased reflectivity from respondents, but such reflectivity is usually considered beneficial. Furthermore, the respondents have an objective when

entering the shop, as well as time and financial constraints that they cannot suspend for the sake of creating a performance for me. It thus seems unlikely that consumers would be willing to spend significantly more time or money on altering their grocery shopping, because they are being observed (Czarniawska, 2014). I recognise that since buying sustainable products is currently the "right" thing to do, knowledge that I am investigating sustainable consumption could cause a bias in that direction. In order to minimise such bias, I therefore introduced myself as studying consumption and only turned to questions about sustainability late in the interviews. It is however, interesting to note that such worries seem to be have been unfounded, as when I asked directly about sustainable consumption, consumers often frankly answered that they did not care about it, or just preferred the cheapest option.

Based on these considerations, I decided on a method combining observation, photography and interview. More specifically, I approached consumers when they entered the supermarket and conducted the interview while following consumers around in the shop as they went about their grocery shopping. I could therefore observe which products they chose, and ask questions directly related to the purchase decision that had just taken place. This allowed me to overcome the attitude – behaviour gap, as I did not ask what consumers intended to buy, but asked them after they had actually taken the product. The observation and interviews were, when relevant, accompanied by a photograph of the consumer's shopping list, so a picture of the list could help me compare the written plan with the actual purchases. As surprisingly few consumers brought a written shopping list, the photo was often replaced by questions about whether the purchases were planned, both initially and during the interview. This method of "observation-interview" will henceforth be referred to as "OI".

3.3.3 Observation-interviews in practice

I conducted my OIs in the Rema 1000 shop owned by Christian Vindfeldt, as I had already established contact with him, and he was familiar with my project. The shop is located in Copenhagen. During my interview with him, he mentioned that he sometimes install small campaigns for sustainable products in his shop, and I therefore decided to conduct my research when he was conducting such a campaign. This would allow me to observe the effects of such a campaign, as well as make sure the consumers were faced with the choice of sustainable products. The campaign in place during my OIs consisted of a large display of organic products at the entrance/exit of the shop. The entrance area is occupied by 12 large steel baskets with displays of various products, and this week these 12 baskets were filled with the following organic products: Raisins, oat biscuits, ladyfingers, rice biscuits with chocolate, almond drink and soya drink on the left side and whole-wheat flour, peanut butter, olive

oil, cranberry juice, elderflower juice, apple juice, and orange juice on the right side. Pictures of this can be found in appendix 5. Conducting interviews with such a display in place allowed me to talk to consumers about this device, as well as observe their reaction to it. As a display is always present at the entrance/exit area of this shop, I do not see it as a manipulation of consumers. I am aware that there is a potential for bias towards sustainable products after consumers have passed such a display, however, this is not a problem for my research, as I wish to explore how consumers are "biased" or influenced by devices such as this display.

As outlined in the theory section, the purpose of my OIs is not to interview a representative sample of the population to provide ground for generalisations. Rather the purpose is to produce data that can help understand and describe a phenomenon. In order to gain a nuanced understanding I talked to a varied group of consumers, meaning that I engaged young and old, male and female, consumers with different ethnic backgrounds, and single individuals as well as individuals shopping with their partner and/or children. An overview of my respondent can be found in appendix 6. I further engaged consumers at different times of the week, namely Friday morning, Saturday early afternoon and Tuesday late afternoon. It turned out to be beneficial to choose different days and hours, as the customers and their shopping habits varied, with e.g. the elderly and the bargain hunters shopping Friday morning and family mothers shopping Saturday afternoon. I obtained a total of 43 engagements with customers, of which two were not recorded, leaving me with 41 useful OIs for analysis. The interviews were based in a pre-established question guide that can be found in appendix 7. All interviews were recorded and subsequently transcribed, the interview transcripts can be found in appendix 8. All interviews were conducted in Danish, and all quotes used in this report are therefore my translation of their words to English.

For approaching consumers, I chose a position inside the shop, after the organic display at the entrance/exit, and after the place where shopping baskets for customers are placed. I chose this position for three reasons: I initially considered approaching people outside the shop, to start the OIs before they entered. However, the first day I went to the shop the rain was pouring down, and it thus seemed unlikely that consumers would be interested in being hold up in the rain by my approaching them outside the shop, and I therefore decided to move inside. I maintained this position the following days to ensure consistency in my approach. Secondly, by initiating my OIs after the organic display, I eliminated the risk that my presence or questions would change the consumers' behaviour when passing the products. This way I could ask questions about their choice of products from the organic display without disrupting their behaviour by my approaching them. Thirdly, I soon realised that

customers who do not take a basket are often on a short and specific errand, and thus less likely to provide good cases for observation. This I experienced for instance with person 5, a young man who came into the shop only to head straight for two energy drinks and then leave again. From this place after the baskets, I could therefore wait and engage only the customers who took a basket. It is however, noteworthy that more men than women seemed to enter the shop without taking a basket, and this strategy therefore had the unintended outcome that my respondents include more women than men.

At the start of each OI I introduced myself as a student writing my master thesis on grocery shopping, and asked if I could ask a few questions. I choose specifically not to mention sustainability, in order not to cause a bias in their responses. After that, I asked if I could record the interview, and only after obtaining their consent did I initiate the recordings. The recordings and the transcripts therefore often have a rather abrupt beginning, but for ethical reasons I found it more correct to do it this way. I generally asked a few initial questions before asking if I could follow them around the shop and ask the subsequent questions while they were carrying out their shopping. This allowed me to ask both general questions about their shopping habits, e.g. if they carried a shopping list, and specific questions relating to the product they had just placed in their basket, e.g. whether it was a product they usually buy or why they choose that product instead of a similar product next to it. This approach brought the disadvantage that some respondents were willing to answer a few questions but not willing to let me follow them around in the shop. This only happened on a few occasions, and thus it did not constitute a significant obstacle for the data production, and as even these short interviews provided useful data, they are included in the analysis. An example of this is person 20, whom I was able to ask questions about savers catalogues and products taken form the organic display before the interview was ended.

3.4 Data analysis

For the analysis of the qualitative data from my two rounds of data production, I applied a coding method inspired by what Flick calls thematic analysis (Flick, 2014). The ANT approach highlights the importance of being open to the data, and it was therefore important to apply a coding technique that develop codes from the empirical data rather than apply pre-established codes. Thematic analysis focuses on identifying and analysing themes within the data, by looking for repeated patterns of meaning, without reducing the data and losing the details. This can be achieved because the codes

and themes are developed from the data after the researcher has familiarised herself with the data, and all aspects can thus be included in the coding (Flick, 2014).

As mentioned earlier, I analysed the data from the supermarket interviews before producing and analysing data on the consumer. The processes of coding and analysing the two sets of data therefore differ in significant ways. In accordance with the steps for thematic analysis, I first of all transcribed the two interviews with supermarket representatives, in order to familiarise myself with the data. I then looked for themes or structures that could be used as reference points for coding and analysis (Flick, 2014). It caught my attention that both interviewees talked about different mechanisms, that they could activate to influence consumers, for instance when Anders René Jensen talked about promoting nutritious food, he said:

"*That is we can make sure that there is a larger assortment of healthy products, we can also make sure that they are easy to locate in the shop, and then we can make sure that they don't have to cost a fortune."* (Appendix 3, 85-86)

In this brief passage, Anders mentions three mechanisms the supermarket can manipulate: The assortment of products, the location of the products and the price of the products. He talks about these as ways to influence the consumer's choice, and I therefore realised that these mechanisms were similar to the concept of devices in ANT, and decided to use devices as themes in my coding and analysis. As outlined in the theory section 2.3.3 on devices, I define devices as **"things the employees of the supermarket can manipulate to influence qualification of products and the consumers' calculation".** From the quote above, I thus had the devices assortment, placement and price that I could use as themes for coding. To these I added new devices when I encountered them. This way of coding enabled me to capture all the devices mentioned, while at the same time gain an overview of the many different times and ways the same device was mentioned.

A limitation of thematic analysis is, that it does not provide much guidance into how to analyse the data after coding it in themes (Flick, 2014). For the analysis, I therefore looked to the ANT approach for guidance. As outlined in the theory section 2.2 point 5, a good description is the best explanation, and the analysis of the data therefore focuses on describing how the supermarket use the identified devices. Furthermore, the concepts from the ANT approach to markets transactions are used to deepen the description and give a more profound explanation.

For the coding of data from the OIs with consumers, I applied a similar thematic coding. Given that I had focused on testing consumers' response to the devices applied by the supermarket, it was straightforward to use the same themes when relevant. In addition to that, the OIs focused on identifying additional devices, and for these new themes where added when relevant. To identify additional devices I looked at the responses consumers gave when asked about why they chose a specific product. Their answers would often reveal a specific tool or concern they used in their comparison of products, for instance "because my children prefer this one", or "because it is the cheapest one". I see such arguments as an expression of the material or immaterial tools consumers used to choose products, and thus as expressions of devices such as, in this case, wish lists from others and price or savers. The analysis of data from the consumers was made using a method similar to the first analysis, namely focusing on description. This analysis focused on describing the different ways consumers use the devices identified, and how the devices complement each other. My OIs produced a substantial amount of data, and revealed that consumers not only use devices in different ways but also use different devices. I therefore had to limit my analysis to include only devices mentioned by multiple consumers, as it was not possible to include all examples of devices and their application.

3.5 Summary of the research design

The purpose of this paper is to examine the role of the supermarket in relation to shaping the context for sustainable consumption. This focus was chosen because a review of the literature identified as gap in the literature in terms of examining the context of sustainable shopping and how external factors influence the consumers purchase decision as it takes place in the shop. The paper is therefore based on the ANT approach to studying markets, as this approach enables a focus on the material devices that shape consumption in the supermarket. The research is based on a case study in the supermarket franchise Rema 1000, and in order to see the topic from the perspectives of both the seller and the buyer, the research contains interviews with representatives of the supermarket as well as with consumers. Interviews with consumers are conducted during observations in the supermarket, in an attempt to situate the research in the same context as it aims to study. In order to answer the research questions relating to the devices used by the supermarket and the impact of these devices on sustainable consumption, the analysis of data focuses on describing the many devices applied in the purchase of groceries as well their interrelations.

4. Analysis of the utilisation of devices by the supermarket

As outlined in the theory section, product qualification and calculation are crucial aspects of market transactions. Product qualification takes place throughout the life cycle of the product, and is influenced both by the producer and by the seller, which means that actors in the supermarket also contribute to the qualification of products. Furthermore, calculation takes place when the buyer makes the purchase decision, which ultimately takes place in the shop. This again points to the importance of the supermarket, and its potential role in enabling a calculated decision. Accordingly, the following analysis will examine how actors from the supermarket see their role, and what devices they use to qualify products and enable calculation, both in order to promote sustainable products and in general. This analysis is based on interviews with two employees in the Danish supermarket franchise Rema 1000, Anders René Jensen, Head of Corporate CSR and Christian Vindfeldt, owner and manager of a Rema 1000 grocery store in Copenhagen. The concept of devices is a guiding principle in the analysis, so focus is on describing the devices that the supermarket supplies to consumers, as well as the potential consequence of these devices.

4.1 The purchase decision in the supermarket

In the literature review in section 1.3, it was clear that a majority of literature on sustainable consumption focuses on the consumer and intrinsic motivators, and is based on the assumption that the purchase decision is to a large extent determined before the consumer enters the supermarket. This leaves little room for the supermarket to influence consumers' decision, and is thus in contrast with the assumptions behind the ANT approach. I therefore found it interesting to explore how the supermarket employees view the situation.

The interviews showed that actors in the supermarket see a significant position for themselves in the market, and base their work on the assumption that they have an opportunity to influence the consumers' purchases. As they see it, consumers enters the store with only a fraction of the purchases determined, and then look in the store for inspiration. Christian Vindfeldt elaborates this by saying that consumers mainly have determined which needs they want fulfilled, and then determine how to fulfil those needs while in the shop:

"I would say that 20 % of the decisions are made at home, but that is in terms of writing that you need vegetables for your salad or fruits for your kids' lunchbox. And then you kind of take it from there" (Appendix 4, 20-22).

This gives both opportunities and responsibilities to the supermarket. It gives opportunities because the employees in the supermarket are able to influence consumers and increase sales by tending to the shop. On the other hand, it also places a large social responsibility on the supermarket, and Rema 1000 recognises this responsibility:

"… as a grocery chain we do have a large influence, both backwards in relation to our suppliers with the requirements we set, but we also have a relatively large influence in relation to our customers who come and buy their groceries from us, in terms of which products we offer and the way we do it. So we play a central role and that is also the reason why we say we have to participate in taking responsibility." (Appendix 3, 53-57).

Having established that the supermarket's point of view is different from that found in the literature, as the supermarket sees a significant potential for influencing consumers after they enter the shop, it is now time to explore how they do that, and which devices they make use of in this work.

4.2 Placement in the supermarket

A device that emerge from the interviews as a way the supermarket influences consumer choice is placement. I here think of placement in terms of where in the shop the products are placed, how visible they are, and how they are grouped and placed relative to other products.

One way to use placement as a device is to give products a temporary display. This way the product gets a larger and a more visible placement than its usual spot at the shelf, as is for instance demonstrated in picture 1 showing a section of a large display of organic products.

Picture 1. Example of display of products, Rema 1000 Øresundsvej, 18th of June 2015.

Christian highlights displays as a significant way to control sales of a given product, as he sees a multiplication of sales figures when a product is on display:

"One usually say that you can control the sale of different products. We do that in my shop once in a while, saying, well if we can see at the beginning of a campaign that we do not have enough goods and we might not be able to get enough, then by removing them from the display position and moving them to a place where they do not occupy as much space, then we can control the sales in that way. (...) If we build it in with other products then the sales – it will be maybe a tenth, maybe poorer. We can control the sales very, very, significantly" (Appendix 4, 37-43).

In addition to being used to increase sales for financial reasons, displays can also be used for moral reasons to influence consumers to purchase the "right" products, for instance healthy or sustainable products. According to Anders, such influence occurs e.g. through making products visible and accessible, and thereby inspire consumers by opening their eyes to healthier options:

"When you proceed into the shop and say 'what should I buy for the lunch box or as fruit for the kids', instead of ending up with a Kinder Milk Slide, then it might be wholemeal sticks, granola bars or small bags with nuts, raisins, whatever it is, that can be part of inspiring you to say 'oh yeah that is also an option'. So all the time get some more of these products both at the shelves and pull them out so they are visible, that is where we can be part of pushing the consumer, to give them more options (Appendix 3, 216-221).

Placement also relates to how products are grouped and which products are placed next to each other. As an example, organic products can be placed together, or separated and placed along with the products in their food category. Both options are utilised by Rema 1000, depending on circumstances in the different shops. When choosing to group products based on their food category, it becomes easy for the consumer who is looking for a specific ingredient to compare e.g. conventional and organic products, as these are placed next to each other on the shelf. This is an advantage Christian has chosen to go with:

"In my shop we have chosen to place it [sustainable products] *along with the normal goods, if you can call them that, because then the consumer has the opportunity to see, if I need minced beef, well should I then just take the cheap discount version, or should I take the one that give additional value and which actually maybe, hopefully, gives a better taste than the normal products"* (Appendix 4, 204-206).

On the other hand placing all organic products together allows the consumer who is looking for such products to easily identify the available products, and the shop can show that they offer a broad product range in that category, as well as attract attention to the products. The two aspects of placement can of course be combined, and creating a display with a broad collection of sustainable products is an option that creates a large impression:

"... what you can do is when we choose to create these small campaign, then you can take the products and say now we use some of the display positions, for instance at the entrance, and then we fill it up with products with attitudes, and then we leave out all the other "trash" for a short while. And then you can make a large impression once, where they cannot avoid seeing it because it is right where everyone enters and exits every day". (Appendix 4, 208-211)

4.2.1 Placement as a device

The ANT approach helps us examine how and why placement is a device that is a interacts with the consumers' purchase decision. As mentioned in theory section, competition is about detaching consumers from the network and products of a competitor, by getting the consumer to requalify products and engage in a new calculation so the newly presented product has a chance to win the calculation. When supermarkets create displays of products to inspire the consumer, it is to break the attached consumers away from the preferred products, and encourage them to engage in a new calculation and requalification of products (Callon et al., 2002).

The packaging of products is carefully designed to convey information about the qualities of the product. This means that product displays have the opportunity to introduce new qualities to the consumer, or emphasise existing qualities. Displays of sustainable products thus have the opportunity to propose qualities of sustainability to be considered, when the consumer requalifies products and make the new calculation. While the final purchase decision is a result of a calculation including many qualities, displays have a potential to influence the consumers calculation and purchase decision through promotion of the qualities on display.

The other aspect of placement, considers how products are grouped when placed on the shelves. Singularizing a product and making it calculable includes linking and comparing the product to other products with similar qualities, so the product become comparable, yet different (Callon & Muniesa, 2005). The way products are grouped in the supermarket, has implications for the frame of comparison that the consumer place the product in, and which qualities are the most pronounced. When for instance organic products are placed together, organic products become a separate group of products that are not directly comparable to conventional products. When, on the other hand, organic products are mixed with conventional products and grouped according to food category, the similarity and comparability between those products are clear. This is because the supermarket shelf is a calculative device, that assist consumers in the first step of calculation, i.e. placing the products for comparison next to each other, so it becomes possible to compare them (Callon & Muniesa, 2005).

4.3. Product assortment

Another device used by supermarkets is the product assortment, referring to which products the supermarket chooses to offer and how broad a selection they offer in product categories such as organic food, healthy food etc. At Rema 1000 they take this device seriously as a way to promote sustainable consumption, and expanding the selection of sustainable products is therefore a specific objective in the strategy for social responsibility:

"…*Therefore we have set some objectives, and the new CSR report is due now, …, and there we set up objectives, absolutely publically, about how many more products we shall have within organic etc. over the coming years."*[4] *(Appendix 3, 482-484)*

[4] The objectives mentioned in the Sustainability Report are the KPI's for 2015, which include 3 % more "focus products" that focus on health, and 15 % increase in the sale of products certified as protecting animal welfare. (Rema 1000, 2015)

Decisions about product assortment are made at headquarters, but that is only the first step, and after that, the shopkeepers have to follow up and use the selection of products as a device. Anders Jensen from headquarters recognises that such initiatives must be followed up in each shop:

"*Other than that it is of course a lot in the shop, that when you enter, that the shopkeeper really manages e.g. the fruits and vegetable section so there is a large assortment, that it is fresh, and that you really want to just buy these products." (Appendix 3, 213-216)*

Here ordering the right quantities of products at the right time, is crucial to being able to make full use of the product assortment. If too much meet or vegetables are ordered, these products will remain in the shop longer before being purchased, and thus not be as fresh as they could have been. If too little is ordered and a product is sold out, the consumer will not be able to benefit from the entire product range. According to Christian, offering quality products and making sure the consumer can buy the products they wish, is a powerful device:

"*If you constantly make sure to deliver a high quality to the customer, and the consumer don't have to come in vain, then that is actually just as important as having delicious products at the display positions, so you can do much just by having the products at the shelves."* (Appendix 4, 62-64)

4.3.1 Product assortment as a device

It is not surprising that the supermarket representatives see product assortment as an important device, as it is easy to see that if the products are not available, they cannot be purchased, so a prerequisite for increasing sustainable consumption is that sustainable products are available. But there is more to it, because simply offering a product is not enough for it to be purchased.

An important part of qualification is the negotiation of which product qualities should be included in the list of qualities that describe the product, and how to weigh these relative to each other. The list of qualities is constantly threatened, both by consumers and suppliers, and especially the supply side can use the ability to modify the list as a strategic variable in the quest to position their products (Callon et al., 2002). In other words, the supermarket and other actors on the supply side, are in these constant negotiations able to influence which qualities consumers see as important for a product. Proposing and strengthening the position of specific qualities is therefore a potential way of influencing the consumer's purchase decision. One way of doing that is through the product assortment. When the consumer is more and more often faced with sustainable products, the consumer is also more and more often faced with the proposition that sustainability is a relevant

product quality. In this way, increasing the product assortment is a way to propose and emphasise specific product qualities, and thereby participate in the modification of the list of qualities included in calculation.

4.4 Price tags that include more than price

Price tags are not only a device that tell consumers the price of a certain product, they are also used to convey other types of information about the product. In Rema 1000 price tags include information about the various certificates a product has obtained, as these are illustrated directly at the price tag. This includes a range of certificates relating to sustainability such as organic, fair trade, the swan label and MSC certified fish, as well as certificates relating to health and allergies such as "Nøglehullet" (the keyhole), gluten free, allergy friendly, and no added sugar[5]. An example of what these price tags look like is presented in picture 2. In order to ensure credibility and consumer awareness, Rema 1000 has chosen to focus on certificates that are supported and monitored by Danish Ministries or other public institutions (Appendix 3, pages 8-9).

Picture 2 Example of price tags with certificates, Rema 1000 Øresundsvej, 18th of June 2015.

According the Anders Jensen the objective with the certificates on the price tags is to make it easier for the consumer to locate the products they wish to purchase, and thereby make it easier to choose e.g. the healthy or the organic option:

"… in reality we all know how to live healthily, but funny enough, we do not manage to do it particularly well, all of us. And often it is because it soon becomes a bit difficult, right, or expensive.

[5] The full lists of certificates and logos that are visible on the price tags in Rema 1000 is as follows: The red "Ø" for organic products, the European leaf for organic products, MSC certified Fish, Fair Trade, The Swan Label, Eco Cert, "Nøglehullet" (the Keyhole), Danish Flag, Wholegrain logo, Gluten Free, Lactose Free, No Added Sugar, and Approved by Asthma-Allergy Denmark.

So this, that when you enter you can very fast decode, I think that is very important, and it is also a way to make it easier to choose." (Appendix 3, 298-301)

This added information on the price tags is thus a service to the consumer, so it becomes more convenient to do your grocery shopping in Rema 1000. Furthermore, it is part of the social responsibility strategy of Rema 1000, because making it easier to buy sustainable or healthy products is also a way to promote these products, as Anders elaborates:

"And then hopefully sell more of these products, so we in this way contribute to selling more of these important products that can give a higher level of sustainability." (Appendix 3, 381-383)

Rema 1000 has thus introduced certificates on the price tags to make grocery shopping just a bit easier, and in the hope that making it easier to choose the healthy and sustainable alternatives will contribute to increasing sales for these products.

4.4.1 Price tags as an information device

The first and most obvious way that the price tags with certificates work as a device, is by highlighting the particular certificate as a quality to be considered along with price, i.e. introducing and emphasising various sustainable qualities as product qualities to be included in calculation. When emphasising the qualities, the price tag convey that the potential price premium for sustainable products goes to pay for sustainable qualities, and the certificates thus contribute to the singularization of these products, as different from conventional products. According to Christian, this "explanation" of the price premium is an important function of the price tags as a device:

"Well it is, as already said, many of the price points aren't necessarily that different, maybe it is a few kroner that distinguishes it, and then most consumers would say, well if I have to choose between sustainability and non-sustainability and the difference is two kroner, then one would be willing to, in citations marks, "donate" those two kroner to sustainability, and then be part of contributing to continuing all this stuff about sustainability." (Appendix 4, 235-239)

In addition to this, the modified price tags can contribute to the attachment of consumers, once they have included sustainability in their list of qualities to value. This relates to how the certificates on the price tags function to make it easier for consumers to locate the sustainable products. This ease contribute to attachment by making it easier for the consumer to make purchasing sustainable products part of their consumption habits. If consumers becomes so attached to the certificates and the corresponding products that choosing for instance organic bananas becomes a habit, then the

organic bananas do not have to win a recalculation every time, and it becomes more difficult for other products to detach the consumer from the organic bananas.

Finally, the certificates on the price tags contribute to the singularization of products by highlighting a group to which the product belongs. The visible use of certificates on the price tags, contribute to creating a group of all the products with the same certificate, thus linking the product to a group with specific qualities. This can be particularly useful if, e.g. organic products are not placed next to each other, but separated out to the relevant food category, as discussed in section 4.2 on placement. When that is the case, the physical location cannot link the products as a group, and the visible certificates can instead help in this. The certificates thus help in the singularization, by highlighting that for instance organic vegetables are different from conventional vegetables because they are part of the group of organic products.

4.5 Savers catalogue with information

Every week Rema 1000 produce and distributes a savers catalogue with the coming week's special offers. In addition to being mailed to consumers who wish to receive such catalogues, the catalogue is available at the entrance of each shop, at the website and through the Rema 1000 app[6]. The catalogue directs attention to the savers as well as provide information about products and tips such as recipes.

[6] The layout and presentation of the catalogue is exactly the same online as the physical catalogue.

Picture 3, information about organic products in the savers catalogue, page 18-19 in catalogue for week 24, 2015 (emphasis added). Retrieved 10th of June 2015 from http://rema1000.dk/om-rema-1000/avis/avis/#catalogs/c003xCm/1.

From the interviews, it is clear that the savers catalogues are not only used to advertise weekly savers, but also as a tool in the promotion of sustainable products. The focus in Rema 1000 on promoting sustainable and healthy products has increased over the last 5 years, and along with the savers catalogue is increasingly being used to provide information about the product categories that Rema 1000 wish to promote:

"*If you look at now and 5 years ago, the number of pages with, on a lot of these focus areas, it has been increased a lot, no doubt about it. If you sit down and count, over a year. Then it is, there are significantly more." (Appendix 3, 506-508)*

An example of a page with information about organic products is presented in picture 3. As testament further a testament to the importance of the savers catalogue as an information device, securing a constant flow of relevant information about sustainable products in the catalogues is now part of the strategic planning in the company:

"*Well we have such themes at the national congress, where we kind of plan catalogues, and then we of course bring in these focus areas, so we say, well, we must have organic pages, we must have gluten free pages, so we ensure that we get them included, so there is continuous promotion."* (Appendix 3, 500-503)

Christian also mentions the savers catalogues, when asked about whether Rema 1000 inform about sustainability, and he emphasises that through information about what it implies to choose sustainably, the savers catalogues are used to encourage consumers to choose sustainable products:

"*But otherwise we do that mainly in our savers catalogues. There we run for instance something from something called "Gram Slot" (Gram Castle), and well all our meat it says something about, we have some pork that is called "The Good Pig", where it tells a bit about why one ought to, why we recommend that one should choose these products, what it actually means when you choose this brand or certificate, when it is called "The Good Pig" for instance."* (Appendix 4, 217-221)

It is interesting to hear how Christian explicitly mentions that information in the savers catalogue is used as a way of convincing the consumer to support a particular category of products. Information about sustainable products is usually brought in connection with special offers, so the savers are accompanied by information about the benefits of buying organic products, information about how the products are produced or background information about a sustainable product series. Additional examples of this can be found in appendix 9.

4.5.1 The savers catalogue as an information device

Even though the savers catalogue at first looks like a device whose only function is to provide price conscious consumers with information about how to save money, there is more to it. First of all, the products in the savers catalogue receive a prominent position and the consumer's attention is focused directly on this specific product. A spot in the savers catalogue is therefore similar to receiving a display in the shop, in the sense that such a spot works to detach consumers from the products they usually buy, and encourage a requalification of products. This means that when sustainable products

are featured in the savers catalogue, they are requalified and given a new chance to win a calculation and attach consumers.

Secondly, when sustainable products are featured in the catalogue, the quality of being sustainable is promoted as a quality to consider in calculations. In addition to just showing the quality, the catalogue has the added benefit that there is time and space for additional information about the proposed quality. This mean that in addition to introducing the quality, there is also the opportunity to give consumers information about why this quality is important, and thereby give the consumer more knowledge to include in the calculation. This is important because this can contribute to making the quality valuable for the consumer, by giving the consumer the tools necessary to calculate the benefits of the proposed quality. More specifically when Rema 1000 include information about how purchasing organic products protects the drinking water and secure animal welfare, as in picture 3, this helps support purchasing organic as a quality, as well as provide the consumer with information about some specific benefits of these products.

Inclusion in the savers catalogue generally means that there is a temporary saver on the products, and price is therefore a significant part of the savers catalogue as a device. However, price is such a critical parameter in grocery shopping that it deserves to be discussed on its own, and it is therefore the focus in the following section on price and savers.

4.6 Price and savers

The last device revealed by the interviews was savers, in the form of temporary price reductions, typically one week, on specific products. Savers are difficult to discuss in isolation because they are often accompanied by other devices, e.g. advertising in the savers catalogue and displays in the shop. However, since the discussion has so far not included price, I find it relevant to focus this section on price and price reductions.

Even though the focus in this thesis is on the ethical and value based issue of sustainability, it is necessary to talk about price, because in a consumption situation price is important for consumers. This was evident in the interviews, where price was several times mentioned as a constraint on sustainable consumption, for instance as Anders put it:

"Price is still a very, very important parameter, and we all want to buy the right products, but there is also something called personal finance." (Appendix 3, 610-613)

Parallel to this, price is a constraint on Rema 1000, because they have to balance their efforts to promote sustainable products with a focus on keeping prices down, an issue Christian outlines clearly:

"Among those it is of course also important that the price is right, because we would like to have a lot of good attitudes about sustainable goods and stuff like that, but if the prices then are soaring, then people just won't come here to do their grocery shopping." (Appendix 4, 84-86)

This balancing act between price and sustainability leads us to how temporary price reductions can be a way to introduce sustainable products to consumers. Christian talks explicitly about how he sometimes run focused campaigns where he highlights sustainable products and reduce the price, in order to encourage consumers to try sustainable products that they otherwise might not have tried:

"So by advancing these and maybe activate a product by saying, well it might be that I'm not to make any money on these products today, but then in return I have sold a good experience to the consumers who choose to buy the products, and in the long term they have… Maybe they think that wow this product actually tastes much better than the maybe imported or non-sustainable products." (Appendix 4, 171-174)

The balancing act again presents itself here, because as Christian mentions, such price reductions means that he will then earn less money on selling these products, and there is therefore a limit to how often such temporary price reductions can be economically sustainable.

4.6.1 Price and savers as a device

When looking more closely at the use of savers as a device, savers are a good example of how supermarkets can significantly requalify products. Savers are a good example of requalification, because it shows how sellers can very specifically alter a product quality to reposition the product in the mind of consumers. The requalification in this case relates to the quality of price, and since price is important for many consumers, savers are a powerful way of detaching consumers from the products, they are attached to, and encourage them to engage in a new calculation. Because of this, savers are a good way to inspire consumers to try new or different products, a point Christian also mentioned as a reason for his use of the device. This force in terms of detachment, has also been reported by Miller in his "Theory of Shopping", where his observations of consumers in supermarkets reveal that temporary savers were the most important reason for shoppers to purchase items they had not planned to purchase (Miller, 1998b).

4.7 Concluding remarks

In this section, I have analysed a series of devices, that Rema 1000 use in the attempt to position sustainable products in the minds of consumers and influence the purchase decision towards more sustainable consumption. After identifying and describing the devices, theories and concepts from ANT have helped me analyse more specifically how and why these devices are useful in repositioning products. The analysis has shown that supermarkets have a series of devices at their disposal that are used to influence consumer choice in multiple ways, and that the ANT approach can be helpful in understanding the mechanisms behind how these devices are potentially forceful.

That being said, the devices discussed here and used by the supermarket can only influence the consumer to buy a product initially. After that, the product go through a series of tests when the consumer, or another person in the consumer's network, consumes the product. These tests are part of determining whether the consumer forms attachment to the product, and the test results and related opinions about the product will obviously form part of future calculations, next time the consumer meet the product in the supermarket. In the following section of this project, I therefore turn attention to the consumer, in order to investigate how influential the above devices are for the consumers' purchase decision, given that consumers also bring their own devices, when they enter the supermarket.

5. Analysis of the consumers' utilisation of devices

The previous analysis of interviews with supermarket actors, focused on the devices that supermarkets use to qualify products and influence consumers' calculation. As a sequel to that, it is of course relevant to turn to the consumers in order to examine which devices consumers use in their purchase decision in the supermarket. This section will therefore analyse data produced through a series of OIs with consumers during their grocery shopping, in order to examine how the devices supplied by the supermarket are used by consumers, as well as which additional devices the consumers use in their calculation. Let us first take a step back, and see if consumers see themselves as being open to the supermarket's efforts, or have their purchases determined in advance.

5.1 Planned and impulsive buying

When examining the use of devices in the supermarket, it is relevant to consider the concepts of planned and impulsive buying. These two categories of buying are outlined by Callon, and relate to whether consumers use mainly the devices supplied by the supermarket, or rely on their own devices in their purchase decision. More specifically, planned buying refers to a situation where the consumer has autonomy and rely on devices prepared before entering the shop. On the other hand, impulsive buying refers to a situation where the consumer is less autonomous and therefore swayed by the devices provided by the supermarket (Callon & Muniesa, 2005). Even though I do not use these categories in my analysis, I find it relevant to consider briefly how consumers themselves see their buying behaviour.

Rather interestingly, consumers express that they are often willing to let go of their autonomy and be swayed by the supermarket. At the one extreme, some consumers admit that they enter the supermarket without a plan for their purchase, for instance person 3:

"T: Do you know what you want to purchase before you enter?
P3: Not always.
T: No.
P3: I just take something, what I want.
T: So you are inspired in the shop also?
P3: Yes, exactly, I am." (Appendix 8, person 3, 9-14)

Similarly persons 29, 37 and 41 said they entered the supermarket without a plan for their purchases. There are significant differences among consumers in their buying behaviour, but it was notable that

even consumers with a pre-established plan, often were swayed by impulsive buying, as for instance person 4:

"T: Do you generally have a shopping list with all of your purchases?
P4: Yes I do.
T: Yes, so you are not one to let yourself be inspired by what is there?
P4: Yes, I am also, I can also be inspired along the way.
T: Yes, okay, so it is as mixture?
P4: So I am also, there is also room for impulsive buying." (Appendix 8, person 4, 48-53)

This combination of planned and impulsive buying was also mentioned by persons 13, 25, and 26. It therefore seems that there is significant room for the supermarket to influence the consumers' purchase decision, as consumers are often open to consider the supermarkets proposals.

5.2 Devices supplied by the supermarket

The previous analysis identified five devices that the supermarket applies to influence consumers' purchase decision. In this section, I will look closer at how consumers respond to these devices, in order to gain a deeper understanding of whether and how the devices work to influence consumption. The five devices had been identified before I approached consumers, and I therefore had these devices in mind when conducting the OIs. However, as it was important not to bias the respondents in a certain direction, it was not possible to ask questions directly about all five devices, is you will see below.

5.2.1 Placement

As outlined in the methodology section 3.3.3, the OIs were conducted while a display of organic products was in place at the entrance/exit area. It is therefore interesting to examine how consumers responded to this display, and how this use of placement influenced consumption. The previous analysis outlined how displays are used to inspire consumers to try a product to which they were not previously attached, and therefore did not intend to buy. In line with this proposition, the data from my OIs reveals multiple examples of consumers who are inspired by the displays to take products they had not planned to buy, for instance person 15:

"T: Well, now I can see that you have already bought a few things from outside, were those on you shopping list?
P15: No, actually they were not, no.

T: No, how come you have bought for instance those rice biscuits?

P15: Uhm, it was… Probably just because they were right there, tempting. And the raisins I just remembered that I needed." (Appendix 8, person 15, 16-21)

In this case the product was chosen because the consumer was "tempted" by the rice biscuits she saw when passing by, even though they were not on the elaborate shopping list she brought with her (Appendix 8, person 15). A number of other respondents gave similar responses indicating that they had been inspired or tempted by the products on display, see for instance persons 13, 17, 33, and 40. This supports the idea that placement can detach consumers, encourage a new calculation and attach consumers to a new product. This is further supported by the sales figures for the products on display. As is shown in table 1, the products on display experienced increases in sales of between 59 % for elderflower juice and an incredible 653 % for rice biscuits compared to sales the previous week when the products were placed at their usual spot on the shelves[7]. This happened even though prices were kept constant, and no other devices were used to promote these specific products in the given week[8].

Product	Sales in DKK week 1 (11.06.15-17.06.15)	Sales in DKK week 2 (18.06.15-24.06.15)	Sales increase in %
Elderflower juice	425,00	675,00	59
Cranberry juice	250,00	400,00	60
Olive oil	771,10	1787,55	132
Soy drink	375,10	835,45	123
Almond drink	404,10	1100,05	172
Whole-wheat flour	134,55	448,50	233
Peanut butter	782,80	2513,20	221
Rice biscuits w. chocolate	218,50	1644,50	653
Ladyfingers	139,50	251,10	80
Oat biscuits	690,00	1420,00	106
Orange juice	224,00	476,00	113
Apple juice	238,00	546,00	129

Table 1: Sales figures for organic products on display, courtesy of Rema 1000 Øresundsvej.

[7] The organic raisins on display have been excluded from the comparison, because they were subject to a saver in the previous week and prices as well as exposure in the savers catalogue were thus not constant over the two time periods.

[8] Comparison with the previous week has been chosen over comparison to the same week the previous year because prices for many of the products have been subject to change, and it was not possible to control for this potential influence in the comparison. It was therefore determined that comparison with the previous week was the best way to control for changes in other variables that could cause changes in sales figures.

However, these impressive sales figures and the above interview quotes, do not tells us everything about how the display works as a device. When looking further at the data, additional aspects are revealed, e.g. from the person 35, who came to the shop only planning to purchase one item, but nevertheless has chosen two products from the organic display at the entrance:

"T: How come these [products from the display] *have been chosen?*
P35: Well, uhm, they were chosen because I usually shop in Irma, and then I found a product that we usually use in our household, which is peanut butter.
T: Yes.
P35: And, uhm, it was cheaper here than the one I usually buy in Irma. So therefore I took it." (Appendix 8, person 35, 10-14)

This quote shows that placement is not the only device the consumers used to make a decision. In this example, person 35 uses additional devices in the form of tests at home and knowledge about price to perform her calculation. So after the display encouraged her to engage in a new calculation, a number of other devices were used to make the final purchase decision. A number of other respondents were similarly combining devices in their calculation when faced with the displays, e.g. persons 8, 18, 20, 35, 36, and 37.

In the analysis of the supermarket perspective, placement as a device also included considerations about how sustainable products were placed relative to conventional products. As I only approached consumers in one shop, with one way of doing this, my data does not allow me to examine how consumers respond to different ways of placing sustainable products.

5.2.2 The savers catalogue

Every week a savers catalogue is send to the mailbox of many consumers, it is available online and through a smart phone app, as well as physically present at the entrance of the shop, so consumers can take a copy. Maybe as a result of this multiplicity of presences, the OIs reveal that the savers catalogue is used by consumers in many different ways.

Some consumers use the savers catalogue not only to choose which products to purchase, but also to choose which supermarket(s) to visit, as for example person 4:

"T: It looks like you have been looking at the savers?
P4: That I do.
T: Yes. So you look at the savers catalogue?

P4: I am a "savers hunter", you can call it, yes.
T: Okay. And then you make a plan based on that?
P4: Yes I do.
T: Yes.
P4: That is also why I go to four different shops." (Appendix 8, person 4, 28-35)

Person 4 use the savers catalogue to make a shopping list of products to buy and which supermarkets to go to in order to take advantages of a large number of savers. Person 40 similarly used the savers catalogue to determine which shop to go to. For both consumers, the savers catalogue occupy a prominent position as a device for planning grocery shopping, and deciding which specific products to purchase in a given week. This is interesting because the supermarket in this way is able to influence consumers even before they enter the shop, by influencing a device that the consumer themselves create and bring, namely their personal shopping list. I will look closer at the shopping list as a device in section 5.3.1 below.

Another way to use the savers catalogue is to take the catalogue at the shop entrance and use it while shopping. An example of this is person 13, who came to the shop with a shopping list of more or less specified items, and then used the catalogue to make some final decisions:

"T: I can see that you have also taken a savers catalogue. Is that something you often look at?
P13: That is because I usually, uhm, when I come here I look at it. I usually don't look at it at home, but then I just look at it when I get her, then I can just see.
T: Yes, and do you bring it into the shop?
P13: Sometimes, I didn't want to stand out there looking at it. So I figured I would rather, yes, look at it while I am here." (Appendix 8, person 13, 26-31)

Person 13 only looks at the savers catalogue after she enters the shop and passed the catalogue at the entrance. The catalogue is thus not a device for selecting which shop to visit, and for person 13 it was also less significant in determining which products to buy, as she did already have a shopping list before she looked at the savers catalogue (Appendix 8, person 13). As revealed further along in the OI, person 13 then used the savers catalogue to decide between similar products, for instance choosing a specific package of poultry, while the decision to buy meat had already been made.

In the examples above the savers catalogue detaches consumers from products they have purchased before, and requalify the products featured in the catalogue so these come to win the subsequent

calculation. The savers catalogue is thus strong in detaching consumers from the products of competitors and create a new round of calculation. However, whether consumers become so attached to the product that they purchase it again next week, when it is not in the savers catalogue is more uncertain, and will depend on other devices, such as the tests performed when the product is consumed.

In addition to that, the savers catalogue can also be used when a specific product has already been determined by the consumer. Several respondents reply that they use the savers catalogue to look for savers on specific products that they favour, for instance person 10:

"T: Do you sometimes look at savers catalogues before you…?
P10: Oh, yes yes, I do, yes yes.
T: Do you then act based on the savers?
P10: Yes I do, now something that we use a lot is cranberry juice, so when that is on offer, then I stock up on that." (Appendix 8, person 10, 23-27)

In this example, person 10 shows that sometimes the savers catalogue is not used to decide which products to buy, but rather how much and when to buy specific products. The savers catalogue is still a device used in the purchase decision, but this time it works to create a stronger attachment between a consumer and a given product, because it enables consumers to locate when and where to purchase the product that they already have an attachment to.

In the analysis of the savers catalogue, it is difficult to distinguish between the catalogue as a device and the price reduction as a device. The distinction is maintained here for two reasons: 1) As shown in the quotations above, the savers catalogue is sometimes used to plan in advance which shop to visit and which savers to buy where. The savers catalogue and the way it makes the savers visible to consumers before they enter the shop, thus enables a planning of grocery shopping, that is different from when the consumer meet the savers after they have entered the shop and have approached a given product. 2) As described in the previous analysis of the supermarket's point of view, the savers catalogue is used to convey additional information to consumers, for instance about the benefits of organic products. The consumers are thus exposed to more and different information when they look in the catalogue for savers, than when they look for savers on the price tags in the shop. Even though my OIs were not able to capture whether the additional information has an effect on consumers, this difference should not be ignored. In the following section, I will look at savers and prices and their influence when consumers meet them in the shop.

5.2.3 Savers and price

Savers refer to temporary price reductions for a given product, and therefore relate to price as a product quality. When consumers look at products and prices in a Rema 1000 shop, it is not always clearly marked whether the price is a result of a temporary reduction or the normal price. I will therefore consider low price and savers together, to see whether and how these are used by consumers in the calculation.

At first sight price is a product quality that along with many other product qualities constitute a product, and that can be used to singularise the product. However, the OIs reveal that through its visible presence on price tags, price is also a device in itself, when direct comparison of prices is used as a way of choosing between similar products. This is seen when consumers report to choose the cheapest version of a given product, as for instance person 15:

"P15: … And now something as exciting as dishwasher rinse.
T: Yes.
P15: Uhm.
T: There probably aint't that many to choose between, actually. Yes, there was some.
P15: Uhm, that, there I think I will just take the cheapest one. Definitely, cleaning agents…
T: There you take the cheapest one?
P15: There I take the cheapest one." (Appendix 8, person 15, 248-254)

This shows that when choosing among different versions of dishwasher rinse, or other cleaning agents for that matter, person 15 values price as the most important product quality and use the price to decide which article to buy. The calculation in this case becomes a primarily quantitative one, where price is more pronounced in the calculation, than the weighing of qualitative or normative product qualities. Given that money is a scarce resource, it is not surprising that consumers use price as a device, and choose the cheapest option. It is perhaps more surprising, that many consumers do not use the price device consistently. Person 15 above use the price as a device mainly when it comes to cleaning agents, while she choose the more expensive, organic version when it comes to food products (appendix 8, person 15). Person 34 showed similar inconsistency, in using price to choose the cheapest milk, while purchasing organic carrots. This indicates that price can sometimes trump other product qualities and devices, while at other times it is less powerful.

A different use of price as a device, is to look for savers and go for products that are not necessarily the cheapest version, but cheaper than they usually are. As savers are not always clearly marked in

the store, this requires some knowledge about what prices usually are. It is however not uncommon for consumers to know the price of products they buy often, and chose products because of savers, as for instance person 13:

"T: What else are you looking for here?
P13: I am looking at these peppers, because there is also a saver, I saw that yesterday. I did not write that down.
T: Yes. So this is something you buy because of the saver?
P13: Exactly, then it is okay. It is organic, so that is good, when there is a saver I would like to buy it." (Appendix 8, person 13, 74-79)

In this example person 13 buys the organic peppers, not because they are the cheapest ones, but because they are cheaper than they usually are. There is here not a contradiction between using price as a device, and buying the organic version, rather here the saver is used in combination with a preference for organic vegetables. Person 14 similarly responded to buy organic products when there are savers.

In the examples above, savers or price are used to decide between similar products that the consumer wish to purchase. In additions to that, the savers also function in a way similar to displays, meaning that the saver detaches consumers from their plans and encourage a purchase of products they had not planned to buy. This is for instance seen in the case of person 8:

"T: … Now I can see you are purchasing strawberries, was that something you had planned?
P8: Yes. No actually it wasn't, but then I saw that they are only 12 kroner, and then I thought that if they look good, and that is what I am, haha… and now I would actually like one.
T: So it was the saver that made the difference?
P8: Yes, that… " (Appendix 8, person 8, 18-23)

In this example person 8 was not looking to choose the cheapest type of strawberries, rather the saver detached her from her plans and encouraged a new calculation of whether she should buy strawberries or not. A similar example is person 20, who enters the shop to buy lunch, but then sees a saver on chocolate milk and decides to buy that as well.

This description of savers and price as devices, shows that consumers use these devices in at least two different ways. One way is when the consumer is intending to buy a certain product and then chooses the version of it that is cheapest or has a saver. The other way is when savers detach

consumers from plans and encourage purchase of products the consumer did not intend to buy. In addition to that, we saw how savers and price can either be in conflict with other devices, such as a wish to buy organic, or work in cooperation with such desires when savers are attached to favoured products e.g. the organic version.

5.2.4 Price tags with certificates

In the analysis of the supermarket's point of view, it was shown how Rema 1000 illustrates certificates on the price tags, in order to make it easier for consumers to identify the products they are looking for. As this seemed like a useful device for consumers, I was curious to see how consumers used it, and when faced with the certificates during the OIs, I often asked questions directly related to the certificates on the price tags. However, and in spite of the theoretical usefulness of the visible certificates, it seems to be a limitedly used device among the consumers I met.

A common response to questions about the certificates is that the consumer knows the products and knows him/herself which products are healthy, as for instance person 8:

"T: (...) For instance, down here you can see that there are such certificates, then there is the key hole, and flags, and organic. Have you noticed these certificates?
P8: Yes. So, that, yes.
T: Is it something you use?
P8: I don't use them, I know, I know myself, so I don't use them." (Appendix 8, person 8, 45-49)

In this case, person 8 feels she has the knowledge necessary to perform her calculation, and thus do not need the certificates to provide that information. Similar responses were given by persons 14, 15, 18, and 21 who all felt they were familiar enough with the products they usually buy, or knew enough about nutrition to make calculations without the aid of certificates. This response generally related to health and the certificate the Keyhole.

It is, however, not possible for consumers to identify which products are organic without certificates, and for consumer who wish to purchase organic products, the organic certificates are a necessary device. The data reveals that many consumers are indeed interested in organic products, and the preference for organic products was mentioned as a way to choose between similar products, as for instance person 29, who use the organic certificate to identify a feta cheese:

"T: Look now you took for instance this feta cheese, there were many different kinds of feta, how do you choose which one you want among these?

P29: It was the first one I saw that was organic." (Appendix 8, person 29, 118-120)

So for person 29, who is a mother doing her grocery shopping with her husband and two small children, the certificate is a device that makes it easy and fast to identify the organic product. However, in many cases consumers reported that they looked mainly for the certificates on the products, and had barely noticed the certificates on the price tags, for example person 37:

"T: Yes. Have you noticed that there are these certificates on the price tags in here, with "keyhole" and flag and organic and stuff like that?
P37: Uhm, not really.
T: No.
P37: I look more at the product and see if it is organic." (Appendix 8, person 37, 54-58)

To person 37 placing the certificates on the price tags did not seem to provide a useful device, as the certificates are already on the products. Person 37 was not the only consumer using the certificates on the products and persons 29, 30, 32, 34, 36, and 39 all gave similar responses. I found this limited use of the price tags to be surprising, giving that many consumers reported to aim for organic products and the certificates on the price tags were introduced exactly to make this easier for people. An explanation of this could be that, to my knowledge, Rema 1000 was the first Danish supermarket to incorporate certificates on the price tags, and even though other supermarkets have started to follow suit by marking organic products more visibly, it is still not common. This might explain why consumers, are not used to looking at the price tag for this information, but rather look at the product where the certificates have been commonplace for a while.

My OIs thus reveal that even though certificates can provide valuable information to consumers, placing the certificates on the price tags is not contributing significantly, as consumers already have another device at their disposal, namely the certificates on the products.

5.2.5 Product assortment

The last of the devices used by supermarkets was the product assortment. For the supermarket the product assortment is a device that can help attract consumers who are interested in a certain product or product group, e.g. sustainable or organic products, and it can also be used to influence the customers who are in the shop towards a certain type of products. For consumers the product range is not as such a device they can actively use, as their options are obviously limited to the products available in the shop. What consumers can do, is choose the store with the product range most

appropriate to their needs. During my OIs I touched upon this topic by asking why consumers chose to visit this specific store, and a few consumers did indeed mention the product range, particularly within vegetables and organic products, as a reason to choose Rema 1000, e.g. persons 6, 8, 23A and 37. However, as my research was limited to take place in only one store, the data does not allow me to examine the decision between different supermarkets.

Even though product assortment is as such not a device for consumers, a few interesting points about product assortment and sustainability emerged from the OIs, and deserve to be mentioned here. A key sustainability focus for Rema 1000 is food waste, and in order to minimise food waste it is possible for consumer to purchase some vegetables loose, instead of in bags of for instance 2 kg. Particularly for small households this can be an advantage, as for instance mentioned by person 14:

"T: Look, with carrots there are also many different kinds.
P14: Yes, I take the loose ones, because that I am never going to be able to eat [pointing at a bag with 2 kg carrots].
T: So it also has something to do with the quantity this time?
P14: Yes. They are also the only ones who have this actually, Rema." (Appendix 8, person 14, 76-79)

Persons 6, 8, 21, and 37 also mentioned this option to purchase vegetables loose as a reason for either their choice of a given product or choice of Rema 1000 as a store. Even though these vegetables are not necessarily in themselves more sustainable, Rema 1000 therefore seems to be able to influence consumers towards are more sustainable way of consuming through introducing this option in the product assortment.

Another issue is that while consumers reported to favour organic products, convenience and availability are important factors. Whereas in the section on savers catalogues consumers were willing to visit multiple shops to find savers, that does not seem to be the case for organic products. Let us look at person 15 as an example:

"P15: Now I was looking for… (…) well, I was looking for organic, ordinary [as opposed to wholemeal] *organic wheat flour.*
T: Yes.
P15: And there is none.
T: No. So now what you were looking for is actually sold out, what do you look for then?

P15: Not organic.

T: Yes another ordinary wheat flour.

P15: Yes." (Appendix 8, person 15, 127-134)

This example shows that availability is important for the sales of organic products, as when the organic product is sold out, person 35 takes the non-organic alternative, despite her clear preference for organic products. This seems to be the common response, and persons 30, 32, 35, 36, and 40 similarly responded to choose organic products when available, and otherwise take the non-organic alternative. Only person 30 chose to look for the organic product at another store, and only because he had to go there anyway. This indicates that for many consumers the preference for organic products is not strong enough to trump convenience, so product assortment and availability in the supermarket are important factors for sustainable consumption.

5.3 The consumers' devices

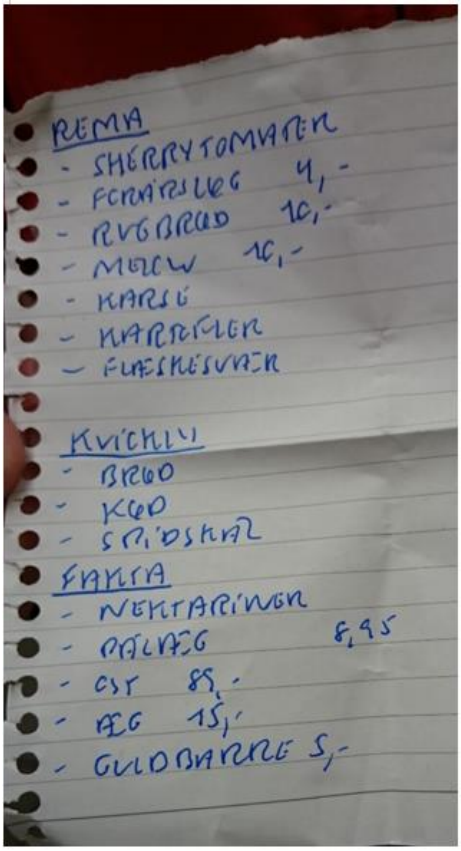
The above analysis took point of departure in the devices supplied by the supermarket, and how they are used by consumers. It was here revealed that the devices provided by the supermarket were often used in combination with devices of the consumers' own making that they brought in from outside the supermarket. In this section, I will therefore describe these additional devices, as they were revealed in the OIs, and examine how these devices are used by consumers.

5.3.1 The shopping list

When talking about devices that consumers use in their grocery shopping, the most obvious is the shopping list. The shopping list is a very illustrative example of a device, because it is a material object that is created by the consumer to help her during grocery shopping.

I often met the shopping list as a small piece of paper with jotted down notes of products to be purchased, but it was also sometimes seen in the form of notes on a cell phone or a shopping list made through the Rema 1000 app. The shopping list could also be present as a device, even when it was not a physical list, and the majority of consumers reported not bringing a physical list, but still having a shopping list planned in their mind, e.g. persons 14, 18, 24, 27, and 31.

Even though a written shopping list seems like a firm device, the OIs revealed that consumers use the shopping list in very different ways. Let us first look at two examples of detailed and elaborate shopping lists:

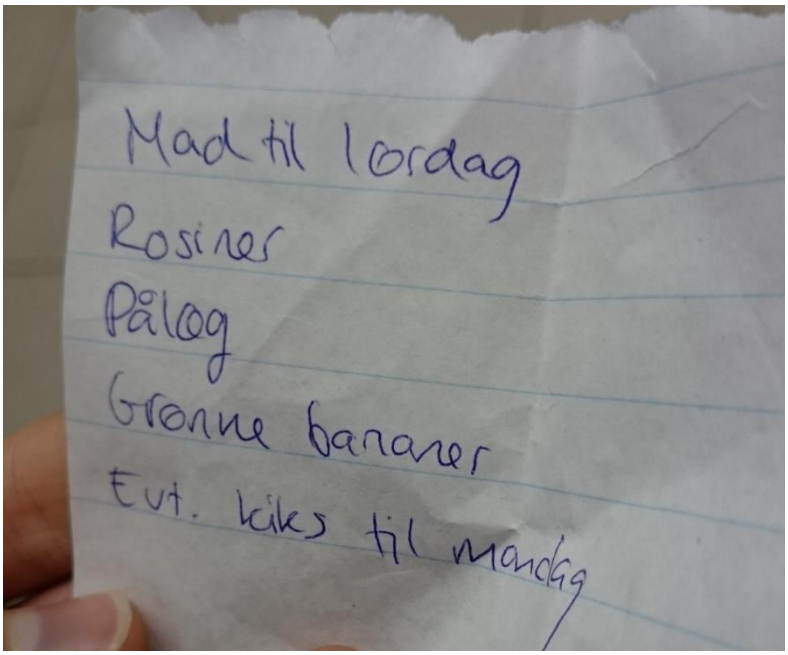


Picture 4: Shopping list person 4

Picture 5: Shopping list person 2

These two shopping lists describe specifically which products to buy, as well as in which shop and at what price. These lists are made using the savers catalogue and therefore refer to a specific article, rather than just a product category such as tomatoes. In one case person 2 has even noted how many bananas to buy at a given price. With such specific reference, these lists do not leave much to be decided in the shop. In addition to savers, an often mentioned reason to have a specified shopping list, is when dinner plans or recipes dictate certain ingredients, this was for instance mentioned by person 22 who was buying unsalted butter for a cake.

Another way to use the shopping list is to have only parts of the purchase decision outlined by the list. This can be when the shopping list merely indicates a product category and not a specific article, as is the case when we look at the shopping list for person 13:



Picture 4: Shopping list person 13

This list is clearly less specific than the first two examples, especially the first item which merely states "food for Saturday". This meant that person 13 had to buy some meat for dinner Saturday, but had not yet decided what type of meat. That decision was left to be made in the shop when she could look at the options. This shopping list leaves more room for devices in the supermarket to detach the consumer from the plan and inspire with potential products, than did the first two shopping lists.

Bringing a shopping list does not mean that the consumer has decided to purchase only the items on the list. This was clearly exemplified by person 30, who even make room for extra purchases on the shopping list:

"T: Do you usually plan you grocery shopping, or..?
P30: Yes.
T: Do you improvise along the way, what you..?
P30: No, I usually plan in advance.
T: Yes, and then you stick to your shopping list?
P30: yeah, well often on the shopping list it says '+ extras'." (Appendix 8, person 30, 42-47)

With this last sentence person 30 shows us, that even when consumers bring a shopping list, it does not mean that all purchases are determined in advance.

The OIs revealed that consumers have many different ways of using the shopping list, with various degrees of planned buying as a result. Furthermore, the shopping list is often used in combination with other devices that help make some final decisions or introduce additional products. This means that even though bringing a shopping list is an indication of autonomous consumers who rely on their own devices, there is still room for the supermarket to influence these consumers. Finally, it is notable that even though consumers create the shopping list at home, the supermarket is in some case able to influence the list, when the savers catalogue is used to create the shopping list.

5.3.2 Wish lists from close others

Throughout my OIs, it was clear that the consumer's calculation does not focus only on the needs of the person who is doing the grocery shopping. The customer's relations to others influence the purchase decision in several ways, and the preferences, wishes and requests from others were often influencing the purchase of products. This influence is most direct when another member of the household requests a specific product, as mentioned by person 14:

"T: Look, then "remoulade" (tartare sauce) was that something that was on the list?
P14: Uhm, yeah it is for my girlfriend. She likes it, I hate it." (Appendix 8, person 14, 89-90)

In this example it is clear that the purchase decision is influenced by the preferences of a person other than the buyer. These preferences are a device, in the sense that the consumer brings a mental list of the preferences of close others, a list that help in the calculation of which products to purchase. In this example it is the product "remoulade" that is requested, while we do not know if the preference pertained to a specific brand or type. In other cases, it is a specific variation of a product that is on the wish list, for instance when person 10 is buying tomatoes:

"P10: … And then I needed some tomatoes, and that is these ones, that is these.
T: Look, there is also quite a lot of different tomatoes, how come you chose those?
P10: Well it is these that my wife likes so much." (Appendix 8, person 10, 49-53)

In this case we cannot know why the product tomatoes is purchased, but person 10 is helped by the preferences of his wife to make a decision between the many types of tomatoes available. Similar are the cases where a member of the household has specific needs that must be considered, for instance special food for small children (person 27), or persons with allergies (person 9).

Desires of others can also encourage purchases that were not planned in advance. This is seen for instance when person 40 impulsively buys a product her boyfriend likes:

"T: What about carrots, were those on the list?
P40: No, actually they are not.
T: No.
P40: But I just remembered that my boyfriend said that he really likes it when they have this top, and then I thought maybe I should be nice and buy these with this top still on." (Appendix 8, person 40, 102-106)

Here the boyfriend's wish is a strong device, as it seems to be the most important factor in the purchase decision and able to determine both the product and the specific variant. There are other examples where the preferences of others are so influential that they trump the preferences of the buyer. This is for instance when a parent prefers to purchase organic products, but the children prefer another type of sausage (person 15), or another type of milk (person 22), or when the buyer chooses to eat or drink a different product because that is preferred by the partner (person 32 and person 41).

What is common for all of these examples is that the preferences and desires of others are used in calculation and choice of products. This indicates that even though the list of wishes is not a material object, it can be utilised as a device, because it helps the consumer in the calculation of which products to purchase.

5.3.3 Home tests

As mentioned in the theory section 2.3.1, product qualities are not easily observable, and have to be revealed through tests. Such tests can be carried out by actors such as government agencies that monitor certificates, by consumer organisations who test and rate products to publish the results, or simply by the consumer and the consumer's household. Before, during and after consumption, consumers evaluate products, in order to determine whether it fulfil their needs, and whether they want to purchase it again. The OIs revealed that consumers often bring such test results with them to the supermarket, and use them as a device to help choose among products. This is outlined by person 16 who has tested many types of disposable nappies:

"T: And nappies is that a habit, or a product you know?
P16: Yes, we always buy them here, we have 5 children, so we have tried a little of everything. But these are simply the best.

T: Okay, so that is because you know these and find that they are the best?
P16: Yes, and have tried them before. I have also tried the others' as well, but they are just not as good." (Appendix 8, person 16, 76-80)

This shows that person 16, after testing different versions, is now quite clear on which nappies to buy, and the tests make the calculation simple for her. Home tests are a device that create attachment to a specific product that becomes a preferred product for the household. This attachment can also be seen in the words of person 28, when looking for dishwasher detergent:

"P28: Uhm, that one I don't know, so I won't buy that.
T: No.
P28: There.
T: So you are aiming for the products you are familiar with and know are good?
P28: Yes, yes. Those are the ones we like at home." (Appendix 8, person 28, 164-168)

For person 28 the attachment to products he knows is strong, as he even says specifically that he would not like to buy a product he doesn't know. Such attachment is often related to the trust consumers put in products they have tested, and the comfort it gives to buy products where "you know what you get". Similar statements, relating to a preference for products they have already tested were made by persons 9, 15, 18, 23, 30, and 40.

5.3.4 Attitudes

In relation to sustainable consumption, it is also notable that choices among products it often based on attitudes towards certain product qualities. One of the attitudes most often encountered was a preference for organic food. This attitude is for instance shown by person 28 who is buying carrots:

"T: There are different types of carrots, did you know in advance that it had to be exactly these ones?
P28: Organic ones, yes.
T: So your aim was that they had to be organic?
P28: Yes." (Appendix 8, person 28, 34-37)

In this example, the attitude favourable to organic food is a device for person 28, because it helps him in the calculation of which bag of carrots to choose. What singularises this product is the quality of being organic, and the positive attitude towards organic food helps establish that this bag of carrots is the one that best matches the needs of person 28. For person 28 the attitude seems to be the most important device, but this device can also be used in combination with other devices. For person 32

the positive attitude towards organic products is supported by the device of home tests:

"T: How did you choose which apples to take?
P32: Ehm, I touch them and then I prefer the organic ones because they taste better." (Appendix 8, person 32, 30-31)

In this example the device of home tests supports the attitude device, as these home tests seem to have revealed that the organic apples taste better than conventional ones. It is therefore here difficult to distinguish the two devices from each other, and as both favour the organic apples, it is not necessary either.

In addition to attitudes towards organic products, I met a preference for Danish products, which was mentioned by persons 4, 6, 32, and 39.

5.3.5 Habit

Several of the respondents in my OIs, showed attachment to a product, so strong that purchasing that product becomes a habit. With habit I refer to a situation where the consumer purchases a product without really going through a conscious calculation, rather the habit becomes a device for selecting products without much thought. This can be a useful device in a busy shopping situation, where going through a calculation for each single grocery item can be both demanding and time consuming. Habits can be seen as an extension of home tests, because products have to pass the tests in order to be repurchased. I here distinguish between habits and home tests for 2 reasons: First of all, habits are a second step that occur when the consumer stops testing and buys the products almost automatically and maybe even without knowing why. Secondly, habits can develop without specific tests of multiple products, but rather based on devices such as attitudes favouring organic products, which can attach the consumer to a specific product, without tests of alternative products. An example of a habit is when person 15 is buying "mini" milk:

"P15: And then I buy "mini" milk
T: Why do you choose that compared to the other organic ones?
P15: That is probably just a habit. But I guess it is also some kind of health stuff, isn't it?" (Appendix 8, person 15, 227-229)

This example illustrates how buying this variant of milk has become such an ingrained habit that person 15 is not even sure why she is buying it. Such habits were also illustrated by consumers giving answers along the lines of "that is what I usually buy", for instance persons 6, 13, 19, and 30.

Habit is included here as a device because it appears in the empirical data as a device, when it is mentioned by consumers, as a way in which they determine which products to buy. It is however relevant to question whether habits are actually a device, or rather a result of a lack of devices that detaches consumers and encourages a new calculation. As mentioned above, habits mean that the consumer does not really go through a conscious calculation, and habits could therefore also be described as a lack of calculation, instead of here as a device used in calculation.

5.4 Concluding remarks

In this analysis I have used my OIs to examine how consumers use the devices created by the supermarket, when they met them during their grocery shopping. This revealed that consumers are often open to these devices and are influenced by them during their purchases. Subsequently the data was used to identify and describe additional devices that are created by the consumers, and that consumers bring with them to the supermarket. These devices are also influential, and the purchase decision is thus often shaped by a combination of devices. In the following discussion, I will therefore look closer at what the identification of this broad range of devices tells us about the purchase decision in relation to sustainable products, and how it impacts the supermarket's ability to influence consumers towards more sustainable consumption.

6. Discussion of findings and implications

The previous two sections of analyses revealed ten devices that are present in the supermarket, when consumers are making their calculations about which groceries to purchase. This means that the calculation of whether to purchase sustainable products is situated in a complex network of devices. In the following discussion, I will try to unravel the interconnections between the devices as well as some implications for sustainable consumption.

6.1 Consumers utilise a multiplicity of devices

The previous analysis, revealed that it was often difficult to describe a single device without touching on other devices that where mentioned simultaneously by the consumer. This shows how consumers often use several devices during a single product calculation. An example of this is persons 23 and 23A who have taken a product from the display, and simultaneously used their own devices in the calculation:

"T: I can see that you have already taken something out there, these organic ladyfingers, was that something that was planned?
P23: No.
T: No, how come you have got them with you then?
P23: That was probably just impulse.
T: Yes.
P23A: He [P23, boyfriend] would like tiramisu, and then they were organic and on offer, so. That is pretty lucky." (Appendix 8, person 23, 11-17)

In this example, persons 23 and 23A are detached from their planned purchases by the display, which simultaneously provides some information about the product i.e. price, organic production and product type. In the calculation, person 23A then uses additional devices in the form of preferences for organic products and price/savers in her calculation[9].

If we take a step back and look at the theory, it is not surprising that consumers apply multiple devices in their calculation. The ANT approach highlights that a product consists of a bundle of qualities that the consumer is willing to pay for. When products hold multiple qualities, it can be necessary to apply

[9] The Ladyfinger were not actually subject to a price reduction, but it is possible that person 23A has interpreted the display as a sign that the product was a saver.

multiple devices in order to be able to include all qualities in the calculation. In the example above the devices complement each other, as all qualities seem to contribute to singularise these ladyfingers as positively standing out from alternative options. However, devices do not always complement each other, rather sometimes they point the calculation in opposite directions. This is for example the case for person 28 who usually rely on his positive attitude towards organic products, but this is challenged when it comes to bananas:

"T: And this time you did not choose the organic ones, is there a particular reason for that?
P28: I don't think they taste as good as the other ones" (Appendix 8, person 28, 85-86).

The opinion about taste is based on previous tests, and the device home tests thus points the calculation towards conventional bananas, whereas the attitude device favours organic bananas. In this case, taste and home tests were given the largest weight in the calculation, but that is not always the case. Again, this has to do with the product as a bundle of qualities. ANT argues that there is constant negotiation about the list of qualities to include in product qualification as well as the weight given to each quality. Due to this constant negotiation, there might not be a single quality or device that is consistently weighed the highest for all products.

This not only explain why consumers use multiple devices for a single purchase, but also why they apply different devices to different product purchases. Because qualification of products take place at the product level, some qualities or devices might be relevant for certain products, but not for others. To further add to the complexity, consumers are part of different networks outside the supermarket, and therefore part of different negotiations. This means that there is also variation across consumers, in terms of which product qualities and devices are weighed the highest for a given product. All in all, this gives a multiplicity of devices as well as inconsistency and unpredictability in terms of which devices will be used for a given calculation.

This has some implications for sustainable consumption. Firstly, the attitude - behaviour gap has received scholarly attention, and various models have attempted to explain the perceived conflict between supportive attitudes and non-supportive behaviour in terms of sustainable consumption. My study reveals that the purchase decision is based on a multiplicity of devices used to perform a calculation containing multiple product qualities. This calculation takes place at the product level, for each single purchase, and for each individual consumer. So even though the quality of sustainability is for many consumers receiving a prominent position in certain products categories, for instance organic fruits and vegetables, the negotiations about product qualities have turned out differently for

other products. This leads me to suggest that the attitude-behaviour gap is not a puzzling gap, but the result of wrongful assumption that consumers behave consistently across different transactions.

Secondly, the differences in devices and qualities across products have some implications for the promotion of sustainable consumption. If negotiation of product qualities and utilisation of devices takes place as the product level, then this implies that organisations that wish to influence calculation and purchase decisions, will also have to work at the product level. It might not be enough to promote sustainability in a broad sense, if it does not translate into qualities and devices that are relevant for consumers in their individual product calculations. To give an example, arguments about animal welfare and protecting the Danish groundwater have been used to promote organic production as a quality for dairy products. The arguments have been quite successful in the negotiation about product qualities for milk, but they do not tell consumers why they should buy organic yeast, and are consequently irrelevant in the negotiation about product qualities for yeast. If supermarkets or other organisations wish to influence consumers towards more sustainable consumption, it might thus be necessary to work both broadly and at the product level in order to influence the negotiation of products qualities for more product directly.

6.2 Supermarket devices moderated by consumer devices

The way consumers combine devices has some implications for the ability of the supermarket to influence consumers' calculation. As seen in the analyses, the devices supplied by the supermarket often have their main influence in detaching consumers from habits and encourage a new calculation. This is the case with the devices savers, savers catalogue and placement in the form of displays, which all work to introduce and requalify products, so a new calculation is encouraged. However, this requalification was often not in itself enough and during the calculation, consumers also utilised their own devices. During this calculation, the influence of the devices supplied by the supermarket is thus moderated by the consumers' own devices, which also have an impact on the calculation. This means that the devices supplied by the supermarket have a higher chance of influencing the purchase decision, if they are complemented and supported by the consumer's own devices, than if the consumer's devices point the calculation in a different direction. Consequently, what looks like impulsive buying encouraged by the supermarket, might not always be as impulsive as it looks. This can be illustrated by an example from the OIs, for instance person 16:

"T: Well, look now, if we look at when you came in you said that you only had to buy nappies, so more has been added to that.

P16: More has been added yes.

T: Are those things that you did not expect?

P16: No, you see, I had to buy them during the weekend. Because I have to bake on Sunday, so.

T: Yes, okay then.

P16: So I don't want to come down here again tomorrow." (Appendix 8, person 16, 81-87)

In this example, it first seems that person 16 was significantly influenced by the supermarket, because she purchased a lot more than she intended when she entered the shop. However, in reality the purchase is influenced by her own devices in the form of her shopping list for Sunday and preferences of her children who influence what she is baking.

An implication of this, is that the influence of the devices supplied by the supermarket could be exaggerated, because it is often complemented by the consumers' own devices. However, more to the point, it implies that the devices supplied by the supermarket have the largest potential to influence, when they are aligned with the devices the consumer brings from outside the supermarket. In relation to sustainable consumption, this indicate that the supermarket has an opportunity to influence, but mainly within a sphere of interest outlined by the consumers' devices. If a consumer for instance brings a negative attitude to organic products, as well as home tests revealing that her children dislike the organic sausages, it is unlikely that the devices supplied by the supermarket can requalify organic sausages enough to win the calculation. On the other hand, if a consumer is looking for raisins and sometimes chooses the organic alternative, this provide a room within which the devices supplied by the supermarket, for instance a display or a saver, can influence whether she chooses the organic raisins today. In this way, the influence of devices supplied by the supermarket is moderated by the consumers' devices.

Devices and qualities are, however, only temporarily stable, and the interconnections between devices are therefore more complex. A consumer's devices are created by the consumer and evolve with the consumer, and the data reveals that the supermarket is sometimes able to influence the consumer's devices. The most pronounced example of this is when the supermarket influences consumers' shopping lists, for instance through the savers catalogue which was used by consumers to plan their shopping based on the weekly savers. Similarly, when an increased product range of sustainable products or promotion in the savers catalogue lead consumers to try new products, these products are tested at home, which influences the devices homes tests and the wish lists of others. This again points to the complexity of promoting sustainable products, because in addition to the direct influence on

consumption, the devices supplied by the supermarket can also have an indirect influence. Given that the direct influence is moderated by the consumers' devices, it seems likely that the promotion of sustainable products will have the largest impact, if the supermarket also work to influence consumption indirectly, through altering the consumers' devices. Creating such indirect influence is likely to be more complex and take longer time to materialise, which again points to the importance of working at multiple levels if one wishes to promote sustainable consumption.

In the illustration below, I have made an attempt to illustrate some of these findings. The illustration uses two examples to show how devices influence the purchase decision. The inconsistency and unpredictability in terms of which devices are used are highlighted by how different devices are influencing the two purchase decisions. The illustration also indicates how the influence of the supermarket's devices is moderated by the consumer's devices. The illustration attempts to capture the interplay between devices through the many lines and arrows between the two groups of devices. However, this illustration has significant limitations, when it comes to capturing and communicating the complexity that has been revealed by following the consumer and opening up the purchase decision. These limitations and the dilemmas they produce for knowledge creation are discussed in the following section.

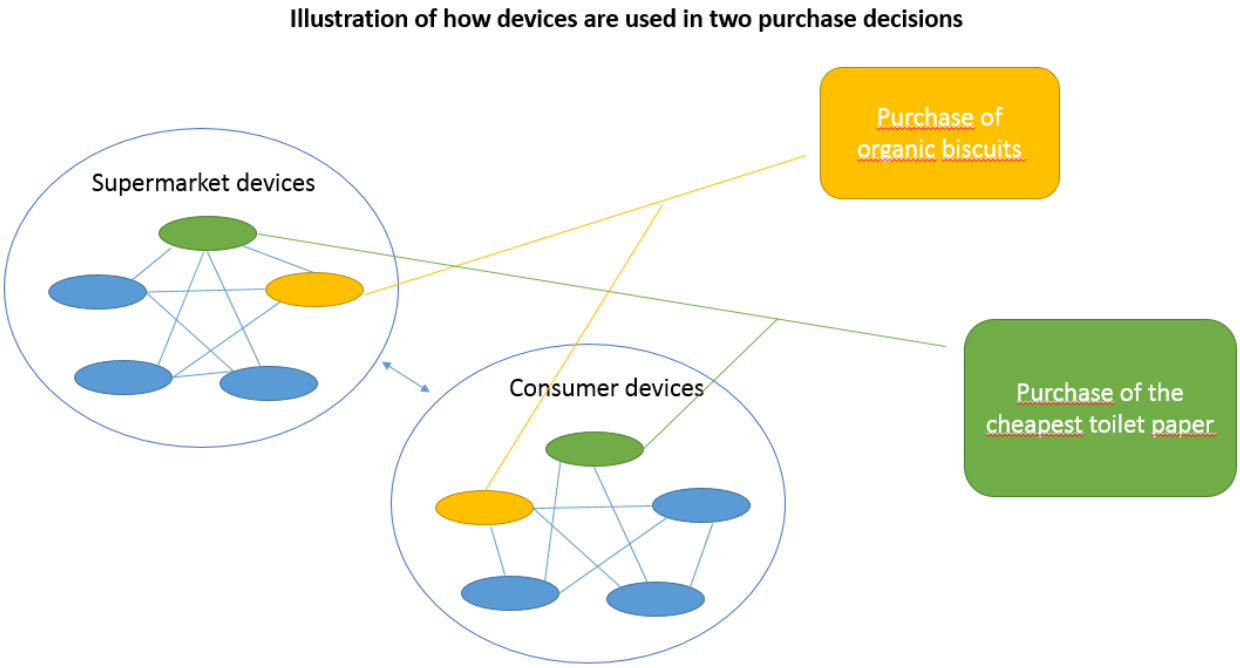


Illustration 1: illustration of the complex network of devices and their inconsistent application in the purchase decision

6.3 Discussion of the knowledge created

The knowledge created in this research is difficult condense into simple answers and difficult to communicate in a simple illustration. This difficulty stems from the research approach, which has implications for the type of knowledge that can be created. The aim of this thesis was to explore and understand the network that surrounds the purchase decision in the supermarket, and as a consequence an inductive approach, using the empirical data as a foundation, was chosen. This choice implies the deselection of applying established theories or models. Models and theories have the advantage that they can condense knowledge to create a simple picture of the world, that is comprehensible. They can therefore provide ground for generalisations about cause and effect relationships (Ingemann, 2013a; Saunders et al., 2009a). My choice not to apply predefined theories or models, therefore has the implication that my research does not fit neatly into boxes and categories, and that I do not arrive at clear answers or simple recommendations.

I have chosen to base my research on empirical data, because I wish to avoid reducing complexities. The world is complex and does not fit into simplified models, and the advantages of models in terms of clarity, thus come with the disadvantage that they have to leave out some of the complexities that do not fit. When aiming to explore real life situations, I therefore have to work with the complexity and unpredictability that the real world include. I chose this approach because it can get me closer to understanding the workings of the network that I am interested in, and this, in my mind, outweighs the disadvantage that it produces complex knowledge and no clear-cut answers.

Making the context of consumption my field site, and following consumers during their grocery shopping provided some interesting insights into how the purchase decision is shaped in the supermarket. Following the consumer shows us the complexity and unpredictability of consumption, and exploring this brings with it a reward in the form of a unique peak into the consumer's reality. My research has revealed complexity and unpredictability in the use of devices among consumers, and thereby gives an insight into why promoting sustainable consumption is accordingly complex. Consumers bring their own network when they enter the supermarket, and they therefore connect to the network established by the supermarket in different ways. An important insight from this project is therefore, that we have to acknowledge this complexity when working with consumers, and that this complexity makes it difficult to apply overall guidelines or initiatives to the promotion of sustainable consumption. Instead my project indicate that in order to be successful, promotion of sustainable consumption will have to work at multiple levels, and engage in negotiation of product

qualities at the product levels as well as with both direct influence on consumption and indirect influence via consumers' devices.

7. Conclusions

This project was inspired by an interest in sustainable consumption and a curiousness as to why so little happens in terms of sustainable behaviour, given the large focus and many positive attitudes towards the idea. This curiosity was further sparked by the literature on the attitude - behaviour gap, as well as my realisation that limited attention has been paid to the context of shopping and the role of the supermarket or other shops. In this project I therefore set out to examine the devices supermarkets can make use of, if they wish to influence consumers towards more sustainable consumptions, as well as to what extent such devices are able to influence the consumers' purchase decision. Sustainable consumption is situated within a larger network of consumption, and in order to gain an understanding of the relevant devices in grocery shopping it was necessary to look more broadly at consumption in general and the purchase decision for all categories of groceries.

Research was conducted through a case study, and guided by the ANT approach and particularly the concepts qualification, calculation and devices, data for the research was produced through qualitative interviews with representatives from the supermarket franchise Rema 1000, as well as observation-interviews with consumers during their grocery shopping in a Rema 1000 supermarket in Copenhagen. Based on data from the interviews with Rema 1000 representatives, I identified five devices that the supermarket use to qualify products and influence calculation. The devices were:

- Placement in the form of displays of products and location of sustainable products in the shop.
- Product assortment
- Price tags with visible certificates
- Savers catalogues
- Savers and price

All of these devices are used in relation to promotion of sustainable products, and the identification of these five devices therefore answers the research question about which devices supermarkets can use.

In a second round of data production, observations and interviews with consumers during their grocery shopping in Rema 1000 provided ground for analysing, to what extent these devices were being utilised by consumers in their purchase decision. The data form the observation-interviews revealed that in addition to the devices supplied by the supermarket, consumers also bring their own

devices to supermarket, and apply these to their calculation. The most commonly used consumer devices were:

- Shopping lists
- Whish lists form close others
- Home tests
- Attitudes
- Habits

Analysis of this data showed that consumers apply a combination of devices in their calculation. This means that in a calculation the influence of the devices supplied by the supermarket is moderated by the consumers own devices, so that the supermarket's devices have a better chance of influencing a purchase if they are in line with the consumers own pre-established devices.

The observation-interviews thereby helped answering the research question relating to the extent to which the supermarket can influence, in that they revealed that the supermarkets ability to influence the purchase of sustainable products, is moderated by the consumers' own devices. This indicates that if the consumers own devices are not valuing sustainable product qualities, it is difficult for the supermarket to have a significant influence on sustainable consumption.

However, the analysis also revealed some opportunities for indirect influence on the purchase decision. Product qualities and devices are a temporarily stable outcomes of continuous negotiations, and the consumers own devices should therefore not be seen as a stable obstacle that cannot be influenced. A notable finding in the analyses was that the supermarket was, in at least one case, able to influence the consumer's devices, namely when the savers catalogue is used to create a shopping list. Through this process the devices supplied by the supermarket has both a direct and indirect influence on the purchase decision. The analysis of the devices supplied by the supermarket revealed that these devices are often designed to influence the negotiation of which product qualities should be given weight, for instance through information about the benefits of sustainable products. If the devices are successful in the negotiation, this would mean an influence on the consumers' devices, and thereby an indirect influence on the purchase decision. The analyses indicate that since this negotiation takes place as the product level, it is necessary to focus effort in negotiations on the products level, as a broad focus on sustainability might not able to influence all the individual products and their negotiations about product qualities. This project therefore indicate that the supermarket might have the opportunity to increase the moderated influence on the purchase decision,

if it is able to influences the consumers' devices and product level negotiations of qualities so these come to give a larger weight to sustainable product qualities. However, further analysis and longitudinal studies are needed to examine these ideas, and investigate whether the findings and relations identified in this specific case are also present in other networks.

This thesis contributes to the academic field by following the consumer, and produce knowledge from an empirical base. This means that the knowledge created reflects the phenomenon studied, by being complex and contain unpredictability. The knowledge created does therefore not translate into easy to apply recommendations, but instead contribute to the understanding of a complex phenomenon that has puzzled researchers, by outlining how the purchase decision relating to sustainable consumption is a consequence of a complex and unpredictable interplay of devices.

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9. Appendices

Appendices are enclosed at a USB drive. An overview of appendices is presented here.

List of appendices