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User-driven Service Design for Environmentally Responsible Consumption

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Contents

1

Introduction

This material deals with user-driven themes presented by user research, behavioural psychology and consumption studies, and the advice that comes from them on the development and communication of environmentally responsible products and services. It is possible to apply the development advice proposed by this material to the development and marketing of solutions for commercial companies producing environmentally conscious products and services. The advice is also suitable for communication and innovation activities aimed at moderation of consumption behavior by the public and third sectors, such as the development of communications, infrastructure, services and regulations supporting sustainable activities.

The development advice presented relies on the findings and solutions produced in international design research, behavioral psychology and consumer research, and on proposals for solutions on processes, themes, opportunities, offers, barriers and development tools for environmentally friendly consumption change. It includes both research into design of product-centric sustainable product use and aspects of the design of service systems related to environmental lifestyles. The behavioral psychology and economics of behavior change have produced internationally popular guidelines and advice on how to bring about change in people's decision-making and behavior. The meta-analysis of sustainable consumption research focusing on the environmental aspect provides starting point information on the typical gap between environmental attitudes and practice and not so environmentally friendly activities. Over the past decade, research into consumption has identified a lot of obstacles to environmentally friendly behavior and potential interests with different consumer groups that are interested in it in different ways.

The situation of green consumption is easy to sum up with the difference in consumers' positive attitudes towards responsible consumption and, on the other hand, despite the positivity of attitudes, the low level of activity. The majority of Western consumers are concerned about environmental issues, but in practice they do not change their consumption habits in a more environmentally responsible direction. (e.g. Gleim et al. 2013, 45-46; Partidario et al. 2010, 2850; Power & Mont 2010, 2574; Re: Thinking Consumption 2012; Young et al. 2010). This situation provides a legitimate reason for conducting user research to identify those elements which prevent consumers from implementing their good intentions and which could help them to do so. The responses and the development potential that come from them concern both commercial solution producers wishing to have environmentally responsible products and service systems on the market and the public sector, which, for environmental reasons, should promote consumer activity to change in a direction that supports ecological sustainability.

Development activities such as product design and service design can produce solutions aimed at overcoming obstacles and exploiting interests, as long as supporting factors are known, and designers and developers have a rich understanding of them.

Themes, models and guidelines based on user data, suitable for the practical development and solutions of products, services and communications, have been developed in this publication, especially on the basis of qualitative interview materials from 76 Finnish consumers. The acquisition of user material was not based on questions related to a specific product or activity, but the purpose was to produce general information and understanding suitable for a wide range of development projects, how to support and with what issues Finnish consumers to become interested and make environmentally positive choices as consumers. The interviews have examined the interests and obstacles to environmentally responsible consumption through the task of arrangement and explanation of 30 images. The selection of images was based on the interests and themes of green communication and consumption that emerged from a wide spectrum of earlier consumer research.

Participants in the interview, aged 20 to 63, were independent decision-makers in consumption from different professional fields. Half of them were from the Helsinki metropolitan area and half from the Joensuu region, representing a medium-sized town located in a sparsely populated countryside. During the interviews, participants used the images and their arrangement to depict their associations, interests, actions and obstacles in relation to green consumption and lifestyle. The interviews also produced stories on consumers' everyday activities, in which the interests and obstacles of the interviewees were practically repeated either as a consideration of the cherishing of the natural environment or as some reckless activities of consumption.

The results suggest drawing attention to areas of interest close to consumers, either directly or indirectly, in their efforts to make green consumption choices. The results also highlight how information on green solutions is difficult to find and

contradictory. Solutions relating to green lifestyles should be presented as socially acceptable and also in relation to social activities. In addition, they should be easy to find and use. The entire study proposes building green consumption communications or solutions as services in the form of a typical customer journey path, so that special attention is paid to access to information, findability, accessibility and availability at the beginning of the journey. Information should be shared in relation to consumer interests and social circles and its findability and availability should be guaranteed in places and times that normally fall within the scope of dealing with issues in the consumers' often busy everyday life with many different requirements. One way to help designers in making environmentally friendly solutions has been to create ideation cards to support them with their design work. This material also presents emerging guidelines and advice on the basis of the background research and empirical material to support the development of environmentally friendly consumer solutions.

The results of the user research suggest that consumers lack services to implement environmentally efficient everyday habits. At the end of this publication, an example of service solutions related to food consumption is presented with interventions relating to service contact points, i.e. interventions by service providers in terms of choices and decision-making. These sample service solutions handle the issues of acquiring and using food and food waste in an environmentally efficient way. They apply the themes of environmentally conscious consumption presented in this publication, empowerment and the stages related to the food consumption service journey. The purpose of the examples is to give concrete examples to how the means to support the environmentally efficient and responsible activities of consumers proposed by the user research and previous studies to design user-driven services are linked to consumer interests, the acquisition and adoption of information, accessibility, ease of discovery and use, and social acceptability and sharing in normal everyday contexts. Such solutions are similar in nature to the user-driven customer journeys in service design.

2

Necessity of a change in consumption

In order to avoid environmental threats, research and development measures to improve only production efficiency and make production environmentally responsible are no longer sufficient. The change in consumption towards the pro-environmental future will not only take place by designing products and systems that are environmentally sound, resource-saving and respect for the principles of the circular economy but will also require people to start using these solutions. The Oslo Declaration on Sustainable Consumption Research in 2006 already stated that a major change in the way consumption is carried out is necessary in the name of a sustainable environmental future (Tukker et al. 2006, 11). A result from the research team that at the end of 2010's has studied the lifestyle required to keep up with the only 1.5 degree temperature increase is that citizens of many developed countries should reduce their lifestyle carbon footprint by 80-90% and that of citizens of some developing countries by 30-80% over the next 30 years. The findings make it clear that changes in consumption models and lifestyles typical in the early decades of 2000 are critical and a key part of the solution package to solve the challenges of climate change. (Akenji et al. 2019.)

In addition to sustainable development activities in the field of production, it is therefore necessary to examine the social and cultural mechanisms of consumption in order to find new models to meet human needs in a sustainable way (Tukker et al. 2006, 11). This means research that is linked to consumer attitudes and activities and how easy it is for the consumers to notice and adapt environmentally low-impact solutions and the new uses - and behavioral habits these require. User-driven communication of environmentally friendly solutions and influencing consumption patterns is important in addition to developing related solutions. The environmental development of consumption is linked to the change aimed at moderation of lifestyles.

According to various indicators, Salo and Nissinen (2017, 3-12) state that consumers' actions corresponded to 68% of greenhouse gas emissions in Finland year 2010. They

describe the origin of the environmental impact of everyday consumption resulting from the four areas of influence:

Housing and energy use

In 2010, housing and related energy usage caused 39% of Finnish greenhouse gas emissions.

Goods and services

When the group includes accommodation, cultural services, leisure equipment and goods, travel costs abroad, clothing and electronics, it accounted for 26% of the greenhouse gas emissions of Finnish consumption in2010.

Food

According to the 2010 calculation, food and beverages (excluding alcohol) accounted for 16 % of the greenhouse gas emissions of Finnish consumers.

Travel

In the 2010 calculation, the use and purchase of Finnish private cars, mobility services and package tours formed the carbon footprint of mobility, which was 14% of the total greenhouse gas emissions of consumers in the 2010 calculation. New purchases of transport, especially cars, are responsible for 74% of greenhouse gas emissions caused by the whole travel consumption sector.

The biggest environmental load generated by consumption and everyday life concerns lifestyle issues: housing solutions, mobility, and choices related to food and product and service use. The effects of housing emphasise both the environmental load caused by construction and the necessary square metres, as well as the energy required for housing, water consumption and waste. It is possible to reduce the environmental impact of all of these. Mobility includes both options between mobility instruments that are differently burdensome to the environment, opportunities for mobility based on sharing and options not to move even at all, at least not in environmentally

unfriendly ways. Food-related choices have the potential to reduce the impact, both in terms of quantity, quality, transport and waste. The use of goods involves opportunities where their number is reduced, for example by sharing or moderation, and the service life is extended, for example, by repair or by various types of variation and recycling.

In addition to various consumption impact calculations, Salo and Nissinen (2017, 14-20) have compiled guidelines with what kind of measures it is possible for the consumers to reduce consumption and increase consumption of another quality to reduce their environmental impact. The Finnish Innovation Fund Sitra's Sustainable Consumption theme sought to guide citizens into an environmentally efficient lifestyle and has compiled, among other things, 100 smart everyday guidelines for reducing the environmental impact of consumption (Sitra 2017).

Laakso and Lettenmeyer (2016) studied the drop of households' material footprints and have advanced in Jyväskylä's Sitra pilot from calculating household material footprints to drawing up road maps and experimenting with new everyday measures and routines in practice with example families. The pilot verified that during the short month's trial period households were able to drop their material footprints considerably. However, the calculation and experimentation also highlighted as an important point the structures behind consumption, which included needs for change in the provision of products, services and infrastructures, but also at the wider system level. This reflects how consumers cannot simply be guided and required to change their habits of consumption, but also the creation of e a favourable environment and services is needed.

The measures necessary for executing the everyday changes for low-impact lifestyle include, but are not limited to:

Reducing the impact of housing and energy consumption

- Smaller and efficient spaces and apartments. This is to consider what functions and facilities are really needed and if many activities can be combined in the same space or if rarely needed spaces can be used jointly.
- Reducing the level and use of heating and air conditioning
- Saving on energy consumption of lights and equipment and related solutions: timers, switching off lamps or separate heating, equipment out of standby mode when no activity is present or otherwise not needed, low-consumption equipment
- Solutions for producing energy (solar panels), heating (woollen socks on), air conditioning in natural ways
- Inspection of thermal economy or energy-using equipment by experts (how to make an apartment more energy efficient or how to replace or diversify a heating system or equipment)
- Renovation with energy solutions, recycling in construction
- Saving on water use, reducing the use of unnecessary hot water

Change in food quality and reduction of waste

- Just buy the necessary amount of food
- Avoid waste by using food before expiring dates and left-over food in time
- Take advantage of the expiring date food and restaurants' left-over food offerings
- Buy local food, seasonal food, less meat (especially red meat), fewer dairy products (especially long-ripened, hard cheeses)
- Favour local vegetables, beans, lentins, soy and fish produced with renewable energy and from sustainable sources

Change in product and service use

- Buying for real need, long-lasting products, long-term use, repair, sharing, recycling, buying at flea markets, different forms of reuse
- Purchase of equipment with low consumption (energy, water, detergents)
- Backgrounds of product manufacturing are investigated and purchased products are produced with renewable energy and made from recycled materials that used little water or chemicals
- Using product service systems: renting a product instead of buying it
- Lending products to others when you do not need them
- Preference for products labelled with a reliable eco-label

Change in mobility

- Increasing the use of public transport, walking, cycling, opportunities for the sharing economy in mobility (carpools, shared means of transport), reducing mobility needs (e.G. Local tourism and virtual connectivity solutions)
- Purchase of low energy consuming and low emissioning vehicles

(adapted from Salo & Nissinen 2017, 14-20)

Things such as living quarters, energy or water consumption, private cars, buying excessive and low-quality goods, eating meat, eating ripened cheeses or wasting food should be reduced. Change does not always mean only giving up and reducing everything, but there are also things on the lists that could be added. For example, investment in solar panels or other technologies for sustainable development, the production of own energy, energy renovations in houses, cycling, walking, vegetarian food, own vegetable cultivation, recycling, reuse or purchase of long-lasting solutions should be increased. From the consumer's point of view, there has also been talk of a review of your satisfaction level, i.e. what you really need and meaningfully want to do? Mobility may be necessary, but there are many ways to meet that need and the most environmentally sustainable of those methods should be chosen.

One example area of the key role of consumption for a sustainable environmental future is the circular economy and related solutions. Lacy and Rutqvist (2015, 24-26) note how the activities of the consumer during the use of the product and in the phase of its removal are the main business starting points of the circular economy. A deep understanding of consumer needs is therefore vital and essential to understand consumer behavior in relation to recycling, community engagement, the purchase of sustainable products and waste reduction.

In the circular economy, existing material products, their selection, use and discard phases should be managed in new ways in order to generate longitudinal, shared and multiple cycle product flows. Service systems that support consumer interaction with these diverse cycles should be developed. The under-use of products and the resulting waste are heavily dependent on interaction between consumers and products, as well as on use and removal processes. An important potential for multiple product cycles exists in the stages of consumer choice, use and decommissioning the products that have already been manufactured in different ways and by making more efficient use of them.

Järvinen (2016) wrote in a Finnish Journal Suomen Kuvalehti, how there may well be 100,000 products in an ordinary middle-class Finnish home, most of which are never used, hardly even remembered. Circular economy-oriented design develops systemic approaches to the use phase of products. Lacy and Rutqvist (2015, xv-xxv) explain that one goal for the circular economy is to tackle the under-use of products when they often have an artificially short or underused service life and are thrown out even when they have other potential uses. Lost capability or tied value can be utilized from existing products, parts or materials that are underused.

The basic idea of the circular economy is to move from resource-linked growth to business-based growth. The concept of waste as a potential value includes all the resources that exist in products already produced. Circular economy business should help customers to make the most of products, help trade between users, serve in different ways to make unseasoned products available, provide buy-back services and sell functionality as a service instead of a product. Value recovery and recycling by various means, extending the life of the product by repairing, updating and reconstructing, sharing platforms and products as service solutions are ways to achieve these goals. In practice, as a business, this means managing resources in the market rather than the typical production management. Often, the activities described above also require the development of service solutions.

However, the biggest environmental impacts are not related to individual products, or to the ideas of recycling easily related to circular economy solutions. In an article compiling his doctoral thesis on the calculation of the effects of consumption on the material footprint, Lettenmeyer (2018) has highlighted similar results of the effects of consumption as those listed earlier in this chapter. On the basis of such a review, he presents the designers of the new solutions with a list of guidelines on what should be specifically designed to reduce the environmental impact of consumers.

Lettenmeyer (2018, 11) is proposing design for one planet (Design for One Planet

Df1P) to specifically prioritize objects that designers should deliver in to reduce the material footprint. These include:

Nutrition
The transition to mostly plant-based food products, reducing the amount of food used and minimizing the waste associated with food products.

Housing
Resource-efficient, zero-energy houses, housing space reduction, resource-sound electricity generation and consumption, the introduction of wind and solar potential and resource-green household products.

Mobility
Reduction of moving mileage, resource efficient services and minimization of movement by private car.

In the division of Lettenmeyer, the products are not a separate impact group and design object, but part of the housing-related design areas. This consideration is important because in design, the attention of environmentally responsible design has long focused merely on individual products and their materials.

3

Product design methods for environmentally responsible solutions

Doordan (2013, 60) and Chick and Micklethwaite (2011, 118-137) have analysed the two different paths that design theory and research follow in their efforts to develop design specifically targeting green consumption, consumer choices and the use phase. One path is trying to improve the efficiency of existing solutions, mostly products, and consumer behaviour related to products. The reforms produced by design will then be carried out within the framework of current technology and everyday solutions. The second path aims at green lifestyle solutions by designing, together with various stakeholders, a new economically viable, culturally vibrant and socially satisfying culture of consumption. The last approach is particularly interested in the possibilities of using products as services. In this case, we are talking about service systems and other solutions to reduce the need for resources. It is also a service approach that helps consumers to adopt environmentally responsible ways of consumption in different sectors of consumption impact: housing, mobility, food consumption and products and services.

Product-centric research and theory, which gradually develops existing solutions, can be called design for Sustainable Behavior DfSB (e.g. Lockton et al. 2012, 7). The title design for Behavior Change has also been used. However, the latter covers a change in behavior that is more than ecologically positive in relation to solutions such as social sustainability, health design, the construction of well-being, safety and crime prevention (Niedderer et al. 2018). A large meta-analysis related to the design of sustainability by Niedderer's research group (2016) shows how, in the area of behavioral change design, one approach tends to change an individual's behavior through his thinking and attitudes. Other approaches tend to influence behavior through external factors such as public regulations or the built environment. Theoretical level knowledge in the different approaches of design for behavior change can be divided into practical concepts, mid-level theories and major theories. Mid-level knowledge involves information about design guidelines and tools that can be applied to practical conceptualization of different components of solutions. Great theories are

represented by different paths through which people's behavioral change is sought to be understood and built. (Niedderer et al. 2018).

Sustainable behavioral design focused on products and infrastructure has typically shaped functional products or environmental usability. Such design is based, for example, on the psychology of usability or environmental psychology. Theories and development tools have been produced from theories such as affordances, i.e. the behavior made suitable through functions of product design or visual and product-based cues that guide the user to behave in a certain way. Information and feedback of using the product have also been added to the process in different ways. In addition to products especially those approaches that apply environmental psychology have also been used to add behavioral guidance in the infrastructure and other operating environments. (Shu et al. 2017, 641-644; Lilley et al. 2018, 40-57).

Product-based approaches have a basis or roots in life cycle analysis, of which it can be noted that the use stage of products often has an environmentally harmful effect. This includes, in particular, the effects of harmful substances related to or remaining waste from use or excessive use of resources in products during consumer product use. Typically, the latter includes products that require energy or water consumption, in which case the development work has focused on measures aimed at reducing the use of such resources through appropriate user behavior and interaction with the product. Technical reforms are often used as part of the solution. Such development studies and related design measures have attempted to convert the product so that the user does not act wastefully. (Cor & Zwolinski 2,014; Sohn & Nam 2015; Shu et al. 2017; Lilley et al. 2018). Products designed in this way consist of redesigned product examples aimed at reducing the use of water or energy. Product solutions, which show concretely how much we spend, are also included in this group. The consumption of energy or water, for example, often goes unnoticed, and that is why we, as consumers, do not even pay attention or understand our own wastefulness.

Bhamra's research group (2011) is combining these interventions, i.e. interventions related to influence, to consumption acts' different phases, in order to overcome the obstacles that old habits create for behavioral change. In their analysis, information and alternative choices are suitable for helping consumers in the awareness phase, feedback is related to the reflection phase, enabling encouragement and guidance are related to actual active use, and automated ecotechnology and smart design are associated with repetitive use. The Selvefors's research group (2011) also reminds us of the objectives of influencing users. Activity planning can improve understanding of environmental issues, create interest among users or engage, lead, encourage or

Figure 1. Solutions have been created to reduce users' consumption during the use of the product, which remind and guide us to reduce the use of water. (Illustration: Mervi Koistinen)

focus their attention on environmental savings. A report that brings together Sohn and Nam (2015, 59) and Lilley's research group (2018, 44-50) highlights that there are two-way ways to influence. On the other hand, it is possible to plan cognitive, thinking and attitudes interventions through information sharing and intangible feedback. There are also physical interventions when the user is directed through activities that are specifically restrictive and enabling.

In design aimed at a change in consumer behavior, it has been proposed to divide the guiding improvements and means in the product according to the extent to which the users can make their own decisions and choices. This relates precisely to the extent to which guidance and interventions are cognitive and to what extent they are related to the design of the product or environment. A product or operating environment may contain verbal and visual information, guidance or support to choose a low-environmental way of working or even the whole solution. The user can also be strongly guided, in which case the product or service includes feedback, rewards, penalties or the reduction of alternatives only to the most environmentally friendly choices. The method of making a major impact can also be built on the product by a kind of manuscript design, and by following it, consumers end up in a less burdensome way of using it. At the level of the most urgent choice, the solution may also include forced or automatic functions to keep the environmental load low. (Bhamra et al. 2011; Selvefors et al. 2011; Lilley et al. 2018, 44-50.)

Design researchers have also been interested in how to make design decisions in different situations about the degree of impact that can be used? Hanratty (2015) describes the Behavioural Intervention Selection Axix (BISA), a tool in which the choice of control or intervention can be considered through the contextuality of interaction. This refers to the level at which the user's thinking in that situation works: whether it is contemplation and analysis or dictated by a rapid operating situation. In a reflex-intensive, thought-focused situation, you can provide information and hope that the

consumer will end up in environmentally efficient operations, but in a fast-operating situation it may be better to produce a more automatic path of environmentally efficient choice.

A typical way to help designers formulate ecologically sustainable products and solutions has been to produce card-based guidelines or suggestions for different solutions. Based on analyses of previous research and workshop-type research by designers, Daae and Boks (2018, 77) have made a card set that utilizes different forms of influence of behavioral change with different perspectives in terms of the power needed to influence, which should be studied in each design-specific use situation.

Figure 1. Different degrees of influence and control to steer the consumer to low-impact use. (applied from Lilley et al. 2018, 45).

Each different form of impact includes two opposing options. They support designers to consider how these different forms of power are suitable for different situations. The cards have photographs and illustrations designed to showcase the degrees of influence and how it can affect the user's behavior.

Their scale consists of the following degrees:

- **Control and its degree:** can the user decide to what extent? (decides – does not decide)
- **The power of intrusion:** how much attention does a design solution require from the user? (requires attention – does not require attention)
- **Encouragement:** encourage desired behavior or encourage the abandonment of undesired behavior? (guides to the desired – steers away from the undesired)
- **Meaning:** does the message of design focus on rational or emotional purpose? (rational – emotional)
- **Direction:** is the desired behavior parallel to or against the user's wishes? (steers the user in the user's desired direction — steers away from the user's desired direction)
- **Empathy:** does the user focus on himself or others' opinion in the use situation? (myself – others)
- **Importance:** How important does the user see this particular activity? (important – less important)
- **Scheduling:** Should the design target the user's behavior before, during, or after the usage situation? (before use – after use)
- **Exposure:** how often should a user face this design solution? (rarely – often)

(Daae & Boks 2018, 78-79).

The background to the possibilities of controls is further specified by Lockton (2018,59-60) by describing the different forms in which design control can be performed. Enabling involves making the target feature easy for users. Motivation involves motivating either doing the desired function or not doing the unwanted. In the case of restrictions, the unwelcomed operation it is made difficult to perform. However, he acknowledges that such a simple control structure with individual decision-making situations may not work in everyday complex actions related to systemic changes. Lockton (2018, 61-63) reminds us how systemic thinking in operating situations is important behind different individual guiding means. By this he means the flow of information, the rules of systems and the ability to convert or change the entire system. In this sense, before influencing a single interaction point and choosing controls, it is worth studying users' mental patterns in a particular use situation, their fundamental knowledge of how different systems and their components could work.

Lockton's development group (2010) has created a Design with Intent Toolbox, which includes 101 different types of cards to explain how behavior can be influenced by design. The purpose of the cards is to provide designers with inspiration guidance on brainstorming, the search for opportunities for problem solving and the classification of existing ideas. Lockton (2018, 63-67) explains how these cards work. Each of the cards consists of a sample image combined with research or a way of promoting some desired behavior through product design. In these cards, the affordances and restrictions offered, particularly in terms of usability, are a means of getting people through products or the environment in a way that reduces the environmental impact associated with products. The term intervention is used in these policies to transform psychological behavioral principles or effects into behavioral strategies and techniques that can be applied to behavioral design. Studies on consumers' own understanding and mental patterns have also been applied.

Cards are associated with the following ways, lenses to view behavioral control:

Architectural: ways of influencing behavior through the design of environmentally controlling structures (for example, traffic control or crime prevention) related to architecture and a more widely built environment.

Prevent errors: Handle behavioral anomalies as errors that formatting solutions can prevent you from making.

Interaction: In particular, forms of interaction related to the technology of persuasion.

Perception: Environmental psychology and observational psychology models related to product semantics (visually perceived meanings of products) that can be utilized in solutions to guide users to perceive models and meanings of interaction in objects.

Cognitive: Applies research results related to decision-making in behavioral economics and cognitive psychology, which have identified heurists (thinking diversion) and intuitive biases caused by past experience, familiarity and emotional reactions. The rapid thinking they produce can be supported to the right direction, on the other hand, decision models that produce errors can be avoided when making design solutions.

Safety: Undesirable behavior can be avoided by planning countermeasures to products, systems and the environment, both physically and, for example, as rights to digital solutions.

Lucid: Take advantage of gamification and playful interactions, such as setting goals, getting points, or setting levels of expertise.

Machiavellian: The goal justifies the means of solutions that can encourage users to behave as desired through marketing, pricing, planned expiration or prescribed engagement.

(Lockton 2018, 65).

The purpose-oriented design cards focus on situational factors that influence how people in everyday life make contextual decisions about their behavior. This also

includes expectations of the results of operations, views on meanings and noticed offerings. The cards advise how to influence people's interactions and situational problem solving with systems, in the different situations that the examples represent. (Lockton etc. 2013, 39-40). Lockton (2018, 64) explains how card development work applied a broad, multidisciplinary and professional spectrum of user problem-solving, interaction and decision-making methods from both human behavior literature and workshop participants or bloggers related to development. The operation of cards and concrete examples were developed through workshops with both design students and professionals.

A map of several motivational factors has also been presented for product solutions as possible solutions for environmentally efficient products to attract consumers to use them. The background to this multi-perspective map is a broad examination of theoretical patterns of human behavior. Different psychological and sociological models have looked at values, beliefs and attitudes, personal and social norms, habits, trust in one's own abilities and operating situation factors such as opportunities, availability, constraints or costs. The menu of design solutions produced on the basis of such extensive analysis includes information from the perspective of general communication, feedback mirroring the user's operations, enabling easy operation, encouraging the user on what to do, advising on recommended practices, guidance and tips on how best to operate, and coercion and automation to ensure environmentally efficient operations. (Shu et al. 2017, 637-645.)

In addition to traditional design based on usability, environment, and cognitive psychology, the principles guiding green behavior have also been sought through approaches from behavioral economics, which Samson (2015) notes take into account the impact of cognitive biases on choices. This research area was already included as one part of the Lockton development team's (2010) purpose-oriented design cards.

Over the past decades, psychological research based on selection situations has

produced an understanding of consumer choices, especially in the sense of how they involve so-called bounded rationality and emotionally colored biases. In other words, the behavioral research has clarified certain heurist ways of thinking, which are quick and intuitive in everyday reasoning and decision-making, which people easily follow when making practical decisions. These include ways how reasoning quickly affects choices, such as the availability of a matter from memory, feelings about one's own expectations and decision-making situation, attention to something that arises or is raised in particular, the need to stick to the old and the usual, the ability to look at the impact of things only in the short term, the pressures of social norms and groups, or the pressures of reciprocity. These biases and their utilization also involve a lot of opportunities to influence behavior as a so-called nudge. (Thaler & Sunstein 2008; Samson 2015).

Guidance on these heuristics and biases for behavioral change purposes has been published and offered in the form of Artefact's (the latest version of 2019) Behavior change strategy cards. The role and capabilities of persuasion and creation of marketing touchpoints inside design-like professions has also been highlighted, as Toxboe (2018) has developed idea cards for persuasive purposes (Persuasive Patterns Card Deck). This thinking based on psychological consumer research has also been used in shaping sustainable solutions. On the other hand, broad sociological and cultural research on sustainable consumption has not been used more widely as a source of information for theories of ecologically sustainable design and the guidance that follows. However, many of the guidelines and psychological persuasion techniques in behavioral economics when applied to design solutions require broad information related to the context of development and cultural user understanding.

The Bridgeable's Designing for Behavior Change Toolkit is a material designed to guide the use of intervention possibilities raised from behavioral economics together with the principles of service design. This toolbox presents the concept design agency's

approach to utilizing behavioral economics when designing products or services to nudge users at the time of decision. Bridgeable's Behavior Change Framework has been created for design professionals who are familiar with the ways in which service design and experiential design are used, but for whom the principles of behavioral economics and the planning of behavioral change are new ways of developing. The guidelines present differences in service design and behavioral economics as an important issue. Design emphasizes a holistic review of user experience, while the principles of behavioral economics focus on individual moments of decision-making.

The principles of behavioral economics are therefore mainly applied in separate design messages or features that are relevant when users interact with a solution to make individual decisions about their choices or activities. Individual messages or features affecting decision-making solution are not applicable at the strategic level of design. The principles of behavioral economics are based on an understanding of which decisions are essential to stir the actions of users and which can therefore result in desirable changes. Bridgeable's guidelines point out how the principles of behavioral economics are not applicable to comprehensive experience design, but they can help to understand, identify and apply tips and interventions leading to change to key moments in decision-making. The correct quality of small, but key decisions can even support major behavioral changes. (Bridgeable 2018).

Suitable provision of a control level may be designed to the user depending on the type of task involved and the motivation or focus of the user on the activity in question. An environmentally efficient function can be designed for a solution, for example, as the default setting. Various means of influencing include highlighting a feature or function to strengthen environmentally efficient decision-making and operation, facilitating environmentally efficient decision-making and operation, or making it difficult to perform poor operations. The user can also be led to a comparison in which environmentally efficient activities appear positive or user’s poor way of acting is

compared to the good behavior of fellow human beings. This can therefore be added to the environmentally positive way of doing things, for example by showing how social peers do it. Appropriate action can also be led by a wide range of reminders and stimuli.

Bridgeable concept design office's (2018, 8) data refers to the principles of behavioral economics as predicting what kind of interventions can be used for decision-making. One is an appropriate anchoring related to the fact that the first thing or number that a person hears in a particular context affects his or her assessments and decisions. The second is people's tendency to avoid complex decision-making situations. Excluding things and simplifying creates cognitive shortcuts and can guide the users through what designers are hoping them to do. The third useful principle points out how even small obstacles can lead to abandonment and their removal should be considered if they hinder the desired decisions and activities. Small obstacles can also be created in directions where action is not expected to go. Also, a principle such as the ostrich effect of hiding your head in the sand has been found. This avoidance manifests itself when people do not really know what to do. For this reason, a solid route should be created for people to know where to go and when getting lost on the route the correction of direction should be easy. The last important principle raised by Bridgeable's material is social evidence, which suggests that people are greatly influenced by what they see others doing. For this reason, the action that we want to achieve should be able to be presented as a social norm and invite people to participate as part of the majority.

Although many studies have created design guidance and related tools their use has been tested more with designers than by testing the reactions of the real users to the solutions produced by these tools. (Lockton 2013; Daae 2014) Of course, there has also been processes for creating guidelines that have involved user testing for the impact of the recommended measures. (Montazeri 2013). The impact of intervention strategies has been the subject of testing and how they should be applied to design

with advanced design knowledge, such as attributes and visual design features. (Cor & Zwolinski 2014; Sohn & Nam 2015) In the most recently referred intervention impact tests, the results have not been exactly what the designers expected.

Indeed, a number of researchers have increasingly pointed out how, despite the widespread existence of the guidelines, it is justified to argue that the application of the guidelines and the testing processes are not enough. Research on the actual patterns of the mind and activities in the real use situations at the beginning of the development processes is also necessary for the use of these theoretical design principles applied from the general behavioral research. (Daae & Boks 2018, 77; Lockton 2018, 62-63; Kuijer 2018, 117-125). Measures for behavioral change appropriate to a particular use context can and should also be developed through further participatory co-design (Tischner & Stebbing 2015; Niedderer et al. 2018, 257-258). The Selvefor's Development Group (2014) describes their Design for Behavior Change toolbox to consist of tools to support development to conduct user research and create user personalities in addition to general behavior related product design tools.

4

Design of environmentally responsible services, systems and brands

Lockton's research group (2013, 44) conducted user research on staff interactions with heating in the office environment. They concluded that if the test situations included the possibility of sustainable heating behavior in the form of a product solution or services supporting such behavior, they both allowed low environmental impact behavior for personnel. Both the product solution and the service provided the necessary instrumental availability for the choice of sustainable behavior. Many research centers related to sustainable development have therefore set out to develop solutions that go beyond just developing products as a means of promoting sustainable consumption. This often involve developing interconnected product-service solutions to meet the real needs of consumers.

The concept of Product-Service-Systems PSS was defined in the United Nations Environment Programme in 2009. Systemic eco-efficiency planning includes a system in which products and services together can meet the needs of a particular customer. Their activities are often based on the interaction of stakeholders. It is characteristic of an economic model based on the satisfaction of needs that the need is satisfied, but in combination with the interaction between products, services and stakeholders, not by selling, owning and using only products. (Vezzoli 2013, 276-277.)

Sustainable design has been transformed from mere product ideas looking for excellent environmental performance to product service systems, as they provide ways of radical, systemic, behavioral innovation. The starting point is that efficient functionality, maintenance and availability of products as a shared resource can reduce the need for materials-based resources. Sometimes a physical product can even be completely replaced by a service and the route to intellectual property is open. (Ryan 2013, 410-411). Understanding the use phase as a real operating situation of a product is based on ecological design thinking such as life cycle analysis. Since the stage of receiving and selecting marketing communications has not been highlighted as an activity in these analytical designs, the product-centered approach has easily ignored

lifestyle choices. When developing the stages of user awareness and choice, we will also be able to discuss and develop new concepts in which the immaterial solutions and lifestyle choices of supply and new cultures of consumption are possible. These new solutions may even completely ignore some of the previous wasteful ways of consuming traditional products. (Bhamra et al. 2013, 110-113).

In addition to physical decisions on the procurement and use of materials and services in products and services or the physical decisions of the consumption of resources related to activities, the designer also plays an important role in developing identity and social connections for consumers. The products reflect value systems and are deeply committed to our culture, including poorly identified, but still existing values. The designed products guide us as material responses to how we should act and live our lives. Design solutions can either strengthen previous patterns of living or suggest completely new ones. (Badke & Walker 2013, 390-391). The systemic approach is also important from the perspective of behavioral change design researchers, despite the initial research focus for the individual interaction situations (Niedderer et al. 2018, 250). This includes, among other things, the fact that everyday practices as operating systems are taken as the primary design targets, not the product (Kujer 2018).

Marchand (2013, 158) suggests that there is both weak and strong sustainable consumption and a committed theory of sustainable design with both of these. Weak sustainable consumption refers to the purchase of green and more sustainable products, and weak sustainable design points to the effectiveness of eco-design, which also takes into account the possibilities of appropriating technological innovations. Strong sustainable consumption includes the reasonableness of consumption: both in terms of level, taste and purchase and lifestyle decisions. This adequacy requires individual behavioral changes together with social and environmental innovations. Systemic design can also calculate impacts and target lifestyle changes in the sectors that produce the most harm, for example, in the use of raw materials and energy or

as unnecessary waste. Significant environmental impacts of consumption arise from housing and working environments, mobility and transport, food consumption and over-consumption of products. The design task here would be to find more efficient service and operating environment solutions for these areas of life.

Doordan (2013, 68) recalls how sector-specific advances often fail to solve systemic problems. System-oriented design theory suggests that sector-specific product solutions are no longer enough, but systems require reformation. Ceschini's and Gaziulusoy's (2016) extensive meta-analysis of the change in work done under sustainable design creates an image of how the focus of design has gradually shifted from designing individual products to designing systems, innovations and transformation, change itself.

One example of systemic design are the solutions around the principles of the circular economy. They contribute to the multiple circulation of products during the use phase of products through things such as reuse, repair, resale, repositioning, redesign and guiding them to a new use. All this means service systems that support longevity and recycling functions, not just designing new products, even if they are designed with ecological considerations in mind. Sales platforms such as Ebay even market themselves as advocates for such sustainability with claims along those lines, as the most ecological product is the one that is never made. Of course, this refers to a sales platform that allows the resale of existing products even time and time again. Even these used products have sometimes been manufactured and have then had a certain environmental impact. The system of multiple use of products also has its own risk of causing impacts if they involve a high number of transports, consumer mobility or other activities that produce an environmental impact.

In the name of circular economy solutions, design develops systemic approaches to the use phase of products such as long-term product attachment, product durability and multifunctionality, standardization and compatibility with parts to ensure longevity,

ease of repair and maintenance, reliability and adaptability, unloading possibilities and reassertion opportunities, all ensuring diversity of cycles and long-term use of product materials. The goals are twofold: to slow down the circulation of materials and then also to close the material circles completely. Another important part of the solutions is the different means of making products unnecessary in the first place, if the design solution can be used to satisfy the need for a service-type activity without a product or even to formulate the need for the whole activity out of the systems. (Bocken et al. 2016, 308-320; Clune & Lockton 2018). Even if the original starting point is not the design of behavioral change this kind of life cycle design related to circular economy products is connected to large systemic behavioral challenges: excessive, rapidly changing and underused product consumption.

We can also discuss the effectiveness of supply in meeting needs. Spangenberg's research group (2010, 1488-1489) presents such an idea for passing lifestyle change, since lifestyles are shaped by user situations and habits, and change requires personal motivation and knowledge. Changed lifestyles should also work within certain social circles, linked to acceptability, image and peer identities. Lifestyles are made possible by availability and alternatives that are competitive in terms of resource needs. The aim of the design process in the socio-cultural sustainable solutions approach is not individual human-product interaction, but real-life practices are considered as a starting point for sustainable design solutions such as Kuijer (2014; 2018) presents in his study.

Real-life practices involve the environmental infrastructure, products and services that are provided to us as consumers. Clune and Lockton (2018, 173-175) present studies on promoting cycling. They noted that comparisons made in different countries showed that separate bicycle paths next to heavily trafficked roads, combined with measures to slow down traffic in the suburbs, were very important. They add that through various studies, there will be a wide range of factors on the list: bike parks, opportunities to take a shower, the possibility of integrating cycling with public

transport, the construction of compact, easy-to-cycle suburbs, pro cycling education, limited use of cars, road traffic planning for cyclists in a way that causes little stopping, and flat, fit cycling routes. There were also factors related to the bikes themselves, such as the availability of bike maintenance services and the availability of suitable bikes. It would also be easy to add to the list the big discomfort factor that bike theft occurs frequently in many cities, and services related to preventing and caring for bicycles would also support cycling enthusiasts.

These kinds of solutions point to personal and financial availability, accessibility, fluency and comfort. In addition, an analysis by Lockton's research team (2013, 46-47) of solutions that support green action favor "social evidence": people do what they see other people doing or what others recommend to them especially when they don't know what to do. The list of things that support green activities in this analysis included themes about self-image, that things get done, sees results, can be normal, can ease guilt and get rewards. Smart activities were also related to personal interests, such as improving health. A number of everyday stimuli and barrier removals should be used at the same time to provide positive solutions and support their long-term consumption. As a result of analyses of the possibilities for changing lifestyle choices the sustainable consumption studies presented in the next chapter proposes to consider similar, diverse cultural and social aspects in order to support the ecological change in consumption.

Chapman (2013, 366-369) recalls that designers in the mass production market have worked with a lot of sentimental novelty and desirability. Design has been used to spin the wheel of the consumption society with an endless stream of novelties of visual expression, in which designers produce feel, meanings and styles in addition to practical functionality alone. Building an identity and a socio-cultural lifestyle by changing products is typical. The product may also become outdated in terms of its sentimental and intangible properties rather than through functional deterioration or

ageing. (Chapman 2013, 366-367; Badke & Walker 2013, 399.) These sentimental aspects should be taken into account as part of the efforts of sustainable design to make green choices desirable and, in the case of products, to establish long-lasting attachments. Chapman (2013, 372) has studied how to promote a sentimental relationship with electronic products. The findings of long product relationships included stories related to personal history, attachment to service, not too high expectations, pleasant aging even in a touch-based relationship, new and unexpected pleasure opportunities even with time, a sense of product-based autonomy and the kind of awareness in an interaction that requires skills and practice.

Since desirability is one of the design qualities and pleasure an outcome that can be achieved through it, emotional design and its goals of desirability, joy and affection are also important in green design. In fact, as stated in the next chapter on the results of consumer research, environmentally sustainable choices are mostly not based on rational criteria, but on emotional reasons. This refers to the importance of brand design to deliver intangible, emotional and cultural values to customers, in addition to producing only practical function-based solutions. It seems that by appealing to people's deep desires in the same way that commercial marketing does, it is actually a more effective way of encouraging behavioral change than negative information campaigns. A suitable way is to take advantage of social marketing based on positive emphasis on subjective well-being and self-expression, rather than intimidating people and presenting boring and educational campaigns. (Muratovsky 2013, 178).

Mackenzie (2013, 169-170) emphasizes that there is no point in developing environmentally sustainable products if no one buys them: because people don't think they work, they don't understand them, or they don't think they're for them. The role of branding can be vital in bridging the gap between attitudes and activities. It can take advantage of people's deep understanding, their needs and aspirations to try to gain control of how to motivate people towards more environmentally sustainable

consumption. Branding can be used to normalize sustainable products and services when sustainability is implanted in the way the brand delivers benefits to those who choose it. Effective communication is important. Sustainable offerings should be made attractive by explaining things like ‘what’s right here for me’ rather than selflessness and responsibility. Sustainable products must be presented in such a way that they are relevant in the functions and benefits they produce. These issues must follow the most important issues in terms of realism for each consumer group.

Mackenzie (2013, 171-172) continues to say that green marketing and ecological design have not been able to provide consumers with important and suitable, motivating or normal benefits. These products should be presented in such a way that they address some powerful and universally important lower-level needs: safety, health, family, friendship and social comparison. Green products should work as well as previous products, have a smaller ecological impact and be easy for the consumer to engage with and adapt to. Because people need feedback on their good deeds to get support for continuing to do good, new technologies, social media and gamification can be sources to engage them in organizing this. The reward may be a picture of a tree that grows on the dashboard when using an ecological driving-style app, or an app that somehow rewards people for walking or cycling. Muratovski (2013, 193) also provides examples of social acceptability and sharing, especially among young consumers. Communication platforms can use interesting role models and provide opportunities for social experiences and acceptance, or young professionals can be convinced that sustainable consumption makes them look good.

Iannuzzi (2011,206-212) lists factors that marketers should consider when trying to bridge the gap between the changes in customer behavior offered by the Green solutions and the changes in customer behavior they require. The first thing he emphasizes is understanding and exploiting the personal meanings of customers, either in terms of the content they provide, or the end result produced. The customer

behavior change should provide for customer benefits that customers care about so that the benefits exceed the cost of acquiring them. It should also be ensured that customers have the ability to change their behavior and that services and products that help customers are actually available. Iannuzzi's marketing advice emphasizes making it normal, offering green at the same price as other things, offering green as the default choice, through meaningful value, emphasizing the importance of personalization, rewarding in different ways, concretizing and making it easy to assess the real impact, for example through localization. As general advice for green marketing, Iannuzzi (2011, 180) emphasizes the accuracy of claims, the display of a clear link between products or services and environmental impacts, the provision of additional information and resources to interested customers, and the sending of unified messages through different touchpoints and channels. He even emphasizes honest realism in the fact that what the company offers produces a greener world, as in the end it can't solve the totality of the big green challenge.

Doordan (2013, 68) also points out that designing green products and services is not enough, but that the culture of change must be guided and supported. In this respect, it would be important to take into account different types of consumers. Marchand (2013, 164-165) points out that consumers who care little about sustainable consumption do not have a deep interest in ecological consumption and do not bend easily to reduce their level of consumption or transform their lifestyles, so self-centered motives can play an important role in their transformation to comply with holistically sustainable lifestyle choices. Instead of caring about green products, consumers with a strong conviction of sustainable consumption tend to look for alternatives to mass-produced green products by choosing recycled, local or craft-based products. For them important are the so-called lifestyle and consumption options, supported by selfless and personal motives.

Consumers who are strongly committed to sustainability are important in

supporting activism. Manzini and Tassinari (2013, 222) have looked for good examples of collective, grassroots activities. They have found that behind them there is usually a group of people who have been able to imagine, develop and manage something that is outside the usual problem solving of mainstream sustainable challenges. Activists have found the power of collaboration and creatively combined existing products, services, places, knowledge, skills and tradition. They have relied on their own resources without waiting for a general change in policy, the economy or the infrastructure system. Manzini and Tassinari (2013, 224) propose enabling systems to support such activities, such as a series of products, services and communications that improve the accessibility, efficiency and reliability of cooperative organizations. These can include digital platforms to connect people and make it easy for co-operative organizations to operate. These can be customized and intelligent booking systems, tracking technologies and agile payment systems, or transforming facilities that groups can use in combinations of public and private functions. Logistical services are also needed to support new producer-consumer networks.

Tischner and Stebbing (2015, 320-326) have produced an A2D2C (awareness, despair, design, change, celebrate) behavioral change model with design interventions. In their explanation of the model, they describe how it includes the necessary steps as in the Transformation Psychotherapy (Tischner & Stepping 2015, 320-321) produced by Kanferand Schmelzer in 2005. Similar step-by-step models of progress have also been used for a long time in the design of health promotion measures and support, using steps such as pre-reflection, reflection, preparation, operation, maintenance (Ludden 2018, 97-98).

Tischner and Stebbing's (2015, 320-326) model for consumer behavior change looks at promoting sustainable lifestyle choices as a process in which the first step is to raise the level of consumer **awareness**. According to the model, this means wrapping the necessary information from a specific area of life, how to consume more sustainably.

This should be done in such a way that consumers understand the wider and complex situation or problem associated with this area of life and their role in it, as well as what they can do themselves. The second step is to avoid **despair**. Any negative reaction to such information as despair, ignorance, doubt or ignorance should be collected. This is also accompanied by the possible negative consequences of negative reactions such as surrendering of doing things. Attention should also be paid to the habits used to do things. Design **(design)** can take negative reactions as a starting point and help consumers test a constructive set of functions in an entertaining, fun and safe way. Advice also includes including users in design and helping them to move beyond their comfort zone by arranging positive experiences. A specific **change** step involves motivating consumers to take that experience into their daily lives and experiment with it, assisted so that their past, normal environment and community are transformed into support for the success of behavioral change. Continued support must also be arranged for the desired change in behavior. The final step is to **celebrate** and reward behavioral change with issues such as awards, financial benefits and peer attention to promote positive experience and the inclusion of a new way in everyday routines. This section can also fuel the reproduction of the habit through peer recommendations and role models.

Both the Tischner and Stebbing (2015, 320-326) A2D2C (awareness, despair, design, change, celebrate) model and the model of thinking and implementing the initial and gradual means of change used to promote health are interesting in comparison to the gap between attitudes and behavior practice revealed in consumer research. If you look at the level of awareness, studies from an attitude perspective show that values and attitudes are already concerned about the state of the environment and awareness of the effects of climate change will certainly increase with international research and state-of-the-nation planning meetings, which are constantly being announced by the media. Public awareness is therefore already there, but there seems

to be a lack of situational opportunities and support related to everyday activities. In other things, general information is no longer the way in which this change in consumption and its step-by-step support should be provided if the situation is analyzed from the point of view of the process model. The just-in-time support for practical action must be organized.

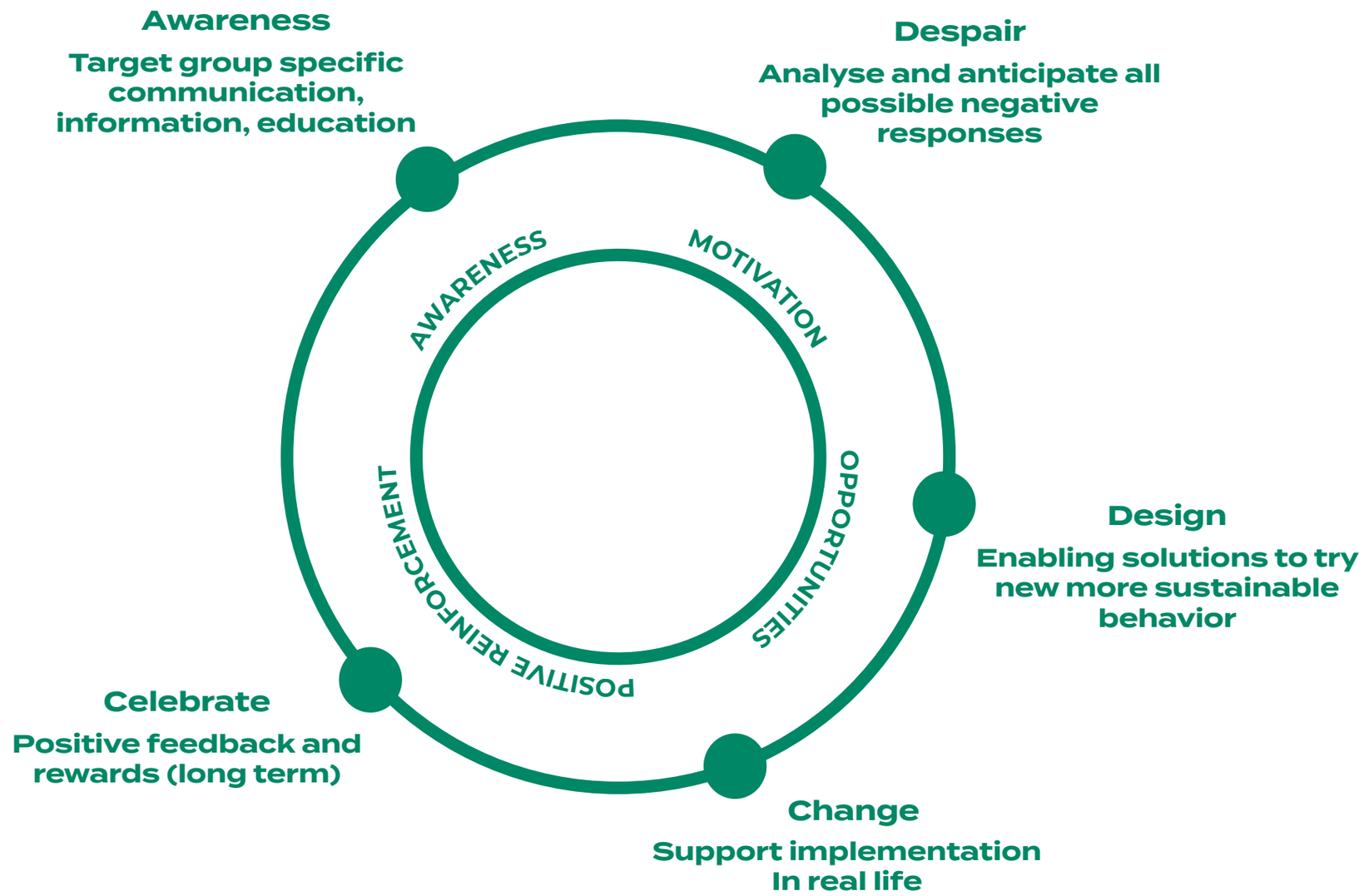


Figure 2. A2D2C behavioral change model, accompanied by specific design interventions (Tischner & Stebbing 2015, 320-326).

In particular, user-activating approaches demonstrate the necessity of real user-driven development. In this case, pre-design user research and co-design during the development process with users are utilized, instead of designing solutions only in accordance with general design guidelines or in a designer-oriented manner, and then only being tested by users. Making a difference can take place through the starting points that are of interest to the user and take advantage of the user's willingness. Designers have a wide range of ways of developing solutions that can be used to change behaviors that are positive for environmental performance, both in terms of the use of activities and in terms of providing emotional and social aspects. In order to design a change in consumer behavior aimed at sustainability, user research is needed on the barriers, customs, emotional meanings and social relationships of everyday life, on in-house and cultural structures and possible initiatives towards green consumption. User research and inclusion also requires the possibility of finding ways to share information that is committed to consumers' interests and to influence different barriers, interests or habits when designing sustainable services and systemic solutions.

5

Psychology of influencing the change in consumption

In a spirit of generalizable usability psychology related to human activity, the solution-oriented research of design has taken advantage of different theoretical models of human behavior and related research-based possibilities to influence changes in consumer behavior through design. These models include looking at values, beliefs and attitudes, as well as personal and social norms. The impact of habits and the opportunities for change and trust in one's own abilities have also been taken into account. These patterns have been provided by studies that have looked at decision-making mechanisms such as behavioral economics, which have shown the impact of certain general biases of thinking in decision-making situations rather than rational decision-making.

Behavioral economics is a research area that seeks to understand how people make decisions. It looks at decision-making through psychological, behavioral, emotional and social influence factors. Contrary to many other economic theories, behavioral economics states that people are irrational. This means that things do not work in such a way that by providing sensible information, people act accordingly. People act, so to speak, in predictably irrational ways in many circumstances. (Samson 2015.)

Behavioral economics is a research area, in which especially psychology is applied to economics, in order to understand people's choices and activities. Traditional economics has studied people's rational behavior and its effects on the precondition that human is, in principle, rational, selfish and self-interest minded. However, this requires that a person has the necessary knowledge and can process information without limitations, be able to make observations and process information without intellectual or cognitive limitations and be in a situation where emotions do not influence decisions. People don't always behave rationally. In the same way, a person is unable to structure what he knows and what he does not. His cognitive ability to process information can have shortcomings and emotions can make the action irrational. These situational factors and the limitations of people's ability to think

prevent rationality. Shortcuts or models of thinking based on previous experiences will be used for everyday situations to facilitate the necessary quick decision-making. We are therefore guided by a bounded rationality. (Honkanen 2016, 29-30). The doctrine of influencing behavioral change has again been taken from nudge theory, which has explored various ways to gently attempt or push actors into behavioral change. Supporting may involve incentives, a so-called proposed selection map, default selections, avoiding errors, feedback and suitable simplification of choices. (Thaler & Sunstein 2008; Shu et al. 2017, 636-641; Bridgeable 2018).

Honkanen (2016, 21) describes the different psychological aspects and means of influencing behavioral change and analyses two pathways of influence: the route and influence based on interaction with the power of personal influence and the design of the social and psychological environments. He sees the application of behavioral economics and the principles of influence as belonging to the first of these (Honkanen 2016, 29-30).

In personal influencing, it is important to distinguish between automatic, fast and intuitive ways of dealing with information from systematic, reflective and conscious and slow ways. When using an automated, intuitive strategy, we take advantage of shortcuts: operating according to learned conditional reaction patterns, using tips and stimuli. In the use of a systematic strategy, we process information carefully, consciously, critically through analyses and estimates, but only through the entrance of a quick, automated thinking that guides our findings and choices first. Slow thinking also requires special motivation, ability and advantageous external conditions. (Honkanen 2016, 44-45.47.) This can therefore lead to conclusions that in the everyday lives of consumers, in a busy everyday life, where many other issues of emotional importance attract attention, sustainable consumption does not even come to mind first and there is not easy room for it or for the complex paths of thought it may require.

Typical shortcuts of thinking include predicting based on random, stereotypical

similarities, utilizing something, which is easiest to recall or anchoring in a previously acquired concept. People also have a strong tendency to social adaptation, comparison and modelling. It is also difficult to receive a large amount of information and a wide range of information related to the selections, and it would be easier to make choices based on just one feature. Context, such as tips and factors related to the environment and the situation, often frame the presentation of the issue and the launch or evaluation of shortcuts. The order in which the selection options are presented, what choices are possible (added, removed), what kind of images are attached to different options, how are the benefits and losses associated with the selections formulated affect our choices. People also often see losses related to choices as higher than profits, and this affects the choices. In the selections, certain emotions and risks are avoided. (Honkanen 2016, 50-51.)

In **forecasting**, a person can base their decisions on the fact that something is similar enough to something previously known, or they anchor their own assessment in one of the first or familiar basic levels. In the path of **persuasion**, a person chooses, for example, according to the opinion of the majority. In **adaptation** people tend to behave consistently, even if circumstances change. For the **selection** shortcut, a person chooses one selection criterion at a time, and may not be able to go to the trouble of searching for other selection criteria. (Honkanen 2016, 51.) Attitudes also work as part of shortcuts when they make things simpler. Attitudes classify information in a way that helps direct activities in the environment and draw conclusions and assessments quickly. (Honkanen 2016, 80-81).

Because people easily experience a sense of conflict when acting against their own thoughts or attitudes, awareness of this imbalance can trigger a process of change in activity. Public promise can lead to the formation of a similar attitude, or people can be made, despite their misgivings, with new experiments to act against their attitude and it will cause a change in attitudes. Since a change in attitudes does not yet bring about

a change in behavior, it is also important to create concrete steps, that is, a conscious plan for implementing the intention to do so. (Honkanen 2016, 87-89.) Steps for making things happen mean preparing for action by considering when, where and how I should do something (Honkanen 2016, 91). The attitude of self-determination has been shown to have a positive impact on the self-regulation of the individual, self-expression, curiosity, tackling new challenges and engagement (Honkanen 2016, 121). The latter makes an interesting reference to the importance of the degree of freedom of choice expressed by design research in guiding users.

People organize and record everyday observations, thoughts and experiences through schemas, which are stored data packets of the world, events, people, ways of thinking and habits. Schemas control automatic thinking and action. Scripts, on the other hand, are events about operational processes that are being monitored. When processing information, we pay attention to things that are compatible with or conflict with a schema built into our minds. However, schemas are not the same as mental models, which contain perceptions of how things are in the world. They draw conclusions about what is true and, especially in the context of planning, the important question of how something works. (Honkanen 2016, 55 .) Design interventions are often linked to design tips aiming at a suitable link with the users' mental models, in which case the user would choose the appropriate course of action when using the design solution. For example, Sitra's (2017) 100 everyday actions have been presented in the form of reference still images and text sheets. Perhaps as a video presenting a practical operating process, by presenting the different stages of peoples' activities, these activities could be better remembered.

Honkanen (2016, 58) points out that thinking in shortcuts, schemas and scripts and mental models enable rapid response and help avoid cognitive overload by simplifying thinking. At the same time, however, they can distort people's reasoning, maintain rigid operating models and create stereotypical attitudes. So can norms also become part

of the schemas and scripts that control everyday behavior. A norm that is important to one's own group also easily becomes part of an individual's own identity, and the need to act in agreement often makes adaptation mandatory. Norms are useful as shortcuts to thinking or schemas. They make life easy because they provide a framework on which to act. The existence of the norm is based on the belief that a sufficient number of other people act according to the norm. (Honkanen 2016, 141-142.)

When it comes to environmentally efficient operations, the feeling of guilt in particular is an interesting object in the search for opportunities for change. Honkanen (2016, 100-101) describes how from a wide range of emotions it is important to note that they can make people work without any thought process starting or an attitude forming. Instilling guilt is a very effective method of persuasion. Pleading in guilt works best in situations that offer people the opportunity to build a positive image of themselves. Guilt raises the need to make amends and to start correcting the situation, but if it is not possible to make amends, guilt can lead to an attitude in which one's own wrong action is proved right. However, many other negative emotions and, on the other hand, positive often also make us work. Pleasure is often associated with meeting basic needs and steers towards useful action. Fear steers an individual away from harmful situations and causes them to flee or avoid certain situations. Disgust is often associated with unpleasant sensing but can also express moral disapproval and dissatisfaction. Grief is associated with loss and failure and even slows down an individual's ability to process and function. Anger raises the ability to function, either to defend yourself or to attack. When it comes to emotional appeal, humor affects mood, likeness and helps to pay attention to something. Fear generates avoidance practices, and it is only an effective means when people have means to avoid the threatening incident. (Honkanen 2016, 370.) Honkanen (2016, 94) also refers as a quick reaction to experiencing astonishment, for example in situations where observations do not meet expectations. Such an experience of conflict causes the individual to stop and suspend

own activities and even initiate the processes necessary for the change of activity. An example could be being amazed that you have not understood the state or change of nature and how one's own actions could therefore be opportunities for change in relation to it.

In invoking motives strong external incentives and rewards affecting emotions are used, even ones including intimidation or punishment. If the attitude was originally formed on the basis of emotions, then an emotionally appealing way to change this attitude is effective. If, on the other hand, it has been influenced by facts or beliefs, there is a need for conscious influence. The use of emotions is especially effective when people do not have the opportunity, motivation or ability to initiate more systematic thinking processes. Emotional attraction can be less effective for people who need to think, reflect and understand things. (Honkanen 2016, 99.) Humour influences people's moods and draws their attention to something. Humour is also a way to make people like the influencer more. (Honkanen 2016, 101.) In the name of sustainable environmental performance feeling too serious, it would also be good to take advantage of the potential of humour and joy in changing consumption.

Motivation can be built using various incentives, sanctions, social pressures and norms. It can also be influenced by framing the environment and context in which people make their choices. When it comes to internal psychological processes, one can try to initiate an automatic, fast thinking path by utilizing external stimuli and triggers for heurists and norms. Alternatively, we can invest in a systematic, slow thinking path by getting people to think about what they really need, want or appreciate in some situation. (Honkanen 2016, 125-126.) In motivating people, learning paths can be promoted by emphasizing continuous improvement, development and learning, performance, good grades or meeting standards. In doing things, you can emphasize joy, enjoyment, enthusiasm or doing things together. (Honkanen 2016, 130.)

A selection architect works so that peoples' possibilities for selecting are framed,

expanded or restricted. People's internal processes can also influence how people use thinking to work on different options or assess their chances of meeting a need or achieving a goal. It is possible to help people by giving them concrete steps, breaking tasks down into sub-objectives, creating a strategy that guides activities, or showing ways or tools to achieve them. Objective and immediate feedback can also be ensured, and feedback can be interpreted in such a way that it enables learning and maintaining or increasing one's own sense of competence. (Honkanen 2016, 134 .) In influencing choices, Honkanen (2016, 314) recommends understanding the selection map: what causal relationships affect different options. It is also worth taking advantage of the ease of default selections so that they are already good choices.

Honkanen (2016, 357-358) notes how a systematic thinking process requires opportunities, ability and motivation. Of course, invoking reason highlights facts and evidence and helps to assess benefits and losses objectively. In this case, things must be presented clearly, convincingly and illustratively, and concrete information on the results and impacts of the operations must also be produced as feedback. Invoking reason can also be about making people aware of their latent thinking patterns. The change involves a learning that requires resources and affects information, attitudes and skills. This can be model learning based on mimicry, providing a clear model that can be followed. Learning can be based on sharing new objective knowledge or personal discovery and insight, experiencing things in a new way, or training for new skills. In the name of problem solving and creativity, thinking tools, problem-solving methods and platforms can be provided for insightful thinking. Learning and inspiration raise people's level of activation, energy, and the belief that goals can be achieved This means that a person himself has the power, ability and resources to deliver the things he wants.

However, Honkanen (2016, 361) points out that embracing a new one can involve resisting when something old has to be given up and let go. The zone of development

can act as a resignation when people are not prepared to accept too much change and a smaller change, which belongs to the so-called local development zone, can be adopted. Such solutions should also be offered. Honkanen (2016, 376-378) associates the desire to stay in the past with evasiveness and not listening, that includes a desire for comfort, laziness and slow start-up. Avoidance behavior also starts when you try to avoid losing things that are important to you or fear losing your identity or position. As a learning anxiety, change is accompanied by efforts and sacrifices involved in adopting a new behavior. One of the reasons for the resistance to change is the experience of not being sufficiently knowledgeable. Clearing up barriers to learning is important, but further anxiety coping can also be increased by making threats concrete and visible. Of course, the initiation of defensive mechanisms should be avoided. Intimidation is effective if people see that there is an alternative to avoiding danger. The difficulty and risks of change should therefore be avoided and made easy, as well as offer easy instructions what actually should be done.

Honkanen (2016, 373-375) also points out that resisting can rise from a feeling that someone is trying to limit one's freedom or ability to choose. A persuasive request can also be minimized, by asking to buy only part of a new thing or increasing the number of seemingly possible positive choice. People would rather say yes than no, in which case research suggests that 'Don't litter' will increase littering, while 'You throw the litter here' will improve the recovery of waste. Guarantees may also be given that a new proposal, product sold, or service contains the promised benefits, in which case the warranty will in a way shift away the source of reluctance. It is possible to frame the typically tricky temporal dimension in a new way: "buy now and pay only next year". The impact on the present or the near future will be assessed more concretely than the relation to a more distant future. The benchmark for selection can be framing if, for example, a similar but much more expensive product is presented alongside the one you are trying to get people purchase. A similar strategy is possible with environmental

impacts: you can do the same, but with smaller environmental impacts.

If influencing is based on slow, systemic thinking, it is necessary to ensure that people have motivation, ability and opportunity for such thinking (Honkanen 2016, 361.) This is often not the case. In influencing automatic thinking, emotions and not consciousness, such models of thinking are used as mind-based guidelines, shortcuts for thinking, cognitive conflicts, framing, selection architecture or memory primers. In this case, attempts are made to identify the correct “triggers” to activate the schema or norm. Communication can take place through different sensory channels, such as using information based on sound, movement or taste. In visual design, the content of the message or the triggers of the schemas are clearly visible. Visuality also affects emotions and desirability. The power of language is accompanied by the structure of the message, the evidence, the use of stories, the power of images, the framework of the message or the intensity of the language. (Honkanen 2016, 358-359)

Influencing can be paved with favorable soil or landscape, affecting how people make observations in the impact situation and what they pay attention to. The information provided by framing is placed in a suitable context. Appropriate words, characters, stamps or codes can direct a person’s attention or determine the issue to be addressed in a favorable way. A positive image can also be associated to the issue to be presented. The meaning content may also be changed if necessary. It may concern the group in which people tend to classify something, that raises certain pre-conceptions and expectations. (Honkanen 2016, 365.)

Social means are important in influencing. People should be made to work together, allowing a sense of belonging to be increased. Building alliances can serve as a basic tactic. Social norms can be particularly exploited. They are used to create a behavioral standard that is perceived necessary to adapt to. People have a need to monitor how others think and act. It is also important to provide suitable and desirable examples, so that change is based on model learning. (Honkanen 2016, 367-368.)

In summary, a very simple diagram can be presented of the psychology of influencing behavioral change, with capability, motivation and opportunity as important factors to consider. This diagram has been developed and used by the Centre for Behavior Change, an English center specializing in studying and guiding in issues of behavioral change (Michie et al. 2011). From the point of view of design solutions, capability involves guiding and easy solutions and nurturing the feelings of ability in solutions. Motivation is a phenomenon linked to one's own interests and feelings of pleasantness and interest in relation to solutions. The opportunities offered by the environment are strongly design made, provided by affordances and solutions that are easy and understandable to grasp. Even taking all these factors into account when making decisions is important, but they can be emphasized in different ways in different use situations when formulating behavioral change and related interventions.

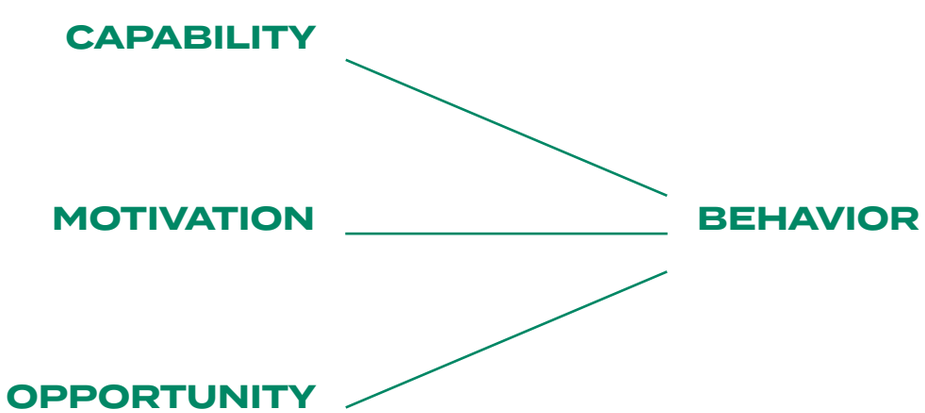


Figure 3. Factors contributing to the change in behaviour (Michie et al. 2011).

Previously explained Honkanen's perspectives represent the means of psychology of influencing behavior in general. The specific means of encouraging ecological consumer behavior have been considered by White and Habib (2018, 9). The data contain guidance in the same way as development guidelines in the field of design research, the target group being practical solution developers or actors developing behavioral change for sustainability. Extensive meta-analysis of market research, psychology and economics, examines the factors presented by the research that ecologically sustainable consumption behavior can have. The guidelines present how practical actors can use the findings of these behavioral factors to strengthen consumers' ecologically positive attitudes and encourage sustainable consumption behavior. The developed SHIFT material presents a series of factors of behavioral type suitable for this purpose.

The material is based on the abbreviation SHIFT, which refers both to change itself and to the English terms of the various factors that help change. People are most likely to be prepared to change negative and maintain ecologically positive forms of consumption when people communicating about related issues consider how Social influence, Habit formation, Individual self, Feelings and cognition and Tangibility can be exploited. (White & Habib 2018,9.) In the practical use this guidance material takes into account both how the practical obstacles to behavior change can be overcome and how meaningful activities can be supported (White & Habib 2018, 11).

In terms of social impact, White and Habib (2018, 19) demonstrate opportunities in social norms. They can be used in communication about what others do and how they accept the desired change in sustainable consumption behavior. Highlighted, this can also mean how relevant others or members of the target group's inner circle take advantage of a sustainable approach, product or service. Social desirability is also useful because desired activities can be presented in social situations. Socially pleasurable associations can be sought to develop a solution. Membership of a social group can

be utilized in a way that the solution is made positive to an inner circle of the group. Healthy competition can also be a possible way of exploiting the group membership experienced by the actors.

Breaking the learned habits can be done by exploiting discontinuity, for example in life changes such as moving from a place to another. It is also possible to use punishments to change habits, but it is advisable to be careful both about their consequences and about their fairness. Instead, there are many ways to support good habits: making it easy, making it cheaper, or making it your default choice. The default selections can define the most environmentally efficient way to perform a basic operating method without user selection, as users have rarely been found to bother changing the pre-set action selection. Various incentives can also be used, such as gifts or financial benefits. Stimuli to support change of habits serve as reminders when they are easily noticeable, clear and close to practical operating situations. Feedback is also a good way, but it should be regular and long-term, clear and attractive, individual and real-time in relation to activities. (White & Habib 2018, 26.)

In the case of individual self, the change support can be based on the use of personal norms if the person has a strong belief in sustainable activities. You can also try to activate the necessary standards by reminding of the requirements of the common good. Associations of action or solution can be linked to the awakening of positive perceptions of yourself and these perceptions of self can be linked to solutions. Consumers should be encouraged to use sustainable consumption in ways that are consistent with their own values, beliefs and past activities. Commitment should also be encouraged in the direction of past perceptions. Individual interests can be encouraged, which can be combined with other principles that help change. Actors should also be made to believe in their own ability to act sustainably and that the desired action has a meaningful impact. Personal differences should also be taken into account: personality, values and demographic differences. (White & Habib 2018, 39.)

Emotions can be exploited in such a way as to activate the feeling of guilt, but only gently, so that the effect of resistance caused by this does not arise easily. Efforts should be made to activate aspects of fear and negative emotional experience in such a way that the feeling of ignorance does not arise. Consumers can be encouraged to feel proud of past positive behaviors and optimism about the results of sustainable operations. Changes should be targeted at activities that reduce danger and activate hope to minimize feelings of fear and anger. Cognition and processes of thought can be fed by providing information alongside other factors that support change. Eco-brands and other third-party certified data sources should be used. It is advisable to use the framework for loss, especially by utilizing concrete information. (White & Habib 2018, 47.)

In the tangible concretization of the benefits, it is worth considering how to do this with future benefits. Concretization can also be targeted at impacts on local issues rather than global impacts. Concrete communication can highlight specific results and steps that consumers can take. The effects of acting and not acting can also be demonstrated in ways that are clear to consumers. The use of lively visualizations makes things concrete. Concrete analogues to similar, comparable phenomena, can be used to communicate the effects and the end result. Things and conclusions can also be presented with clear graphics. On the other hand, as consumption the pleasure of not exercising material consumption: environmentally responsible experiences and services are more environmentally efficient than acquiring excessive amounts of material objects. (White & Habib 2018, 51.)

6

Views of environmentally responsible consumption from consumption research

Instead of general theories and the principles of human behavior, research into consumer perspectives also allows for an overall assessment of sustainable consumption related to environmental issues, its potential incentives, or obstacles for a particular category of users. In this case, the analysis is not so much directed at individual decision-making moments as at broader consumption entities and situations. In a product-centric study, this approach has been represented by a trend that has looked at lead-users. In this case, it means users who strive to operate in an environmentally efficient way in their actual operating situations as justifications and habits and with related products. (Shu et al. 2017, 643). However, in addition to the product development aspect, it is the consumer's situational behavioral entities that are related to everyday activities that are interesting in terms of non-purely product-oriented solutions. They reveal how lifestyles are connected to the diverse and high-quality values, functions, constraints, and social interactions of everyday life that the produced solutions should fit into. Lifestyles also affect to the situational models of activities and, as operating processes, scripts on which the mental models that guide new activities are based in people's minds.

Responsible environmental consumption research and opportunities for this kind of lifestyle change have been addressed under the titles of sustainable consumption, ecological, environmentally friendly, or green consumption research. Sustainable consumption, of course, as a concept includes not only the environmental responsibilities, but also socially ethical consumption and economic sustainability, not just issues of burdening the environment less. Environmentally responsible consumption research has been conducted, in particular, from the perspectives of consumer research, market research, sociology, cultural research, psychology and usability research, or in combination with these (e.g. SCORAI 2013; Sustainability 2010). This includes both research conducted in different countries or by country and various structured in-depth interviews for a specific target group. As a summary, it is possible

to see that there is a lot of sectoral research focused on energy use and renewable energy production, food supply, organic and local food, mobility and tourism and the clothing industry as sectors of industry. The studies have also examined product lifecycle issues directly related to the consumer's activities, such as recycling, repair and the practices of abandonment of goods in different ways.

Comprehensive sustainable consumption requires not only a change in an individual product sector or certain consumption area, but also an overarching lifestyle change. In addition to one sector-based research, the research target has been the consumption-oriented lifestyle of western developed countries, which continues to spread even in developing countries. Various factors affecting differences in households ' carbon footprint, such as place of residence, income level, gender, age, educational level, work tasks and household size, have been investigated, but also consumption patterns, including activities such as housing, mobility, purchasing habits and leisure activities. The comparative studies from different countries are represented by a 1.5 degree lifestyle study and its comparison on the carbon footprint (Akenji et al. 2019). Psychological research subjects have included values, environmental issues, social norms and perceived time pressures. The importance of how environment is organized has also been examined as a means of supporting change.

Research into consumption has produced results on how different consumer groups view environmental impact and why, what consumers are motivated to do, what they need and what hinders or supports them in environmentally friendly activities. As a lifestyle issue, the symbolic role of consumption and the building of identity are also important. For example, research on consumers who have already switched to green consumption has found out that, in the minds of eco-shop buyers, the self-image they are building through this purchase relates to virtue, responsibility, social support and the image of a citizen who avoids crime. Personal and community values were also reflected with the help of this kind of consumption (Parsons et al. 2014, 37.)

Studies of the role of the consumer have taken into account both the impact of public sector activities on citizens and have considered the possibility for consumers to commit to influence (e.g. Spaargaaren & Oosterveer 2010, 1887-1908). Civil activism has been the focus of particular research on the transition to more sustainable consumption. It has been viewed both as an ideological phenomenon and as a practical organization: local farming initiatives supported by civic communities, garden sharing programs, energy libraries, food cooperatives, farmers' markets, organic vegetable growing courses or supermarket garbage-dumping clubs. Changes in the everyday consumption behavior of communities and individuals seeking to moderate their everyday lives towards the slow and simple model of life have created interesting targets for empirical research. The phenomena of voluntary simplification, lifestyles of voluntary simplicity (LOVOS), have been seen as a transitional opportunity for such a cultural model to broader consumer practice (Power & Mont 2010; SCORAI 2013: 32, 37, 52, 62, 74.)

In research projects such as Jackson (2005,23-24) and Partidario (2011, 2862) an important area of research has been the relationship between lower consumption and lower CO2 emissions to quality of life, such as self-perceived health, feelings of stress and purpose of life. Such studies have looked for background factors for models of living that support quality of life and lower consumption. Background theory has also been sought in a more general theory of consumer research, such as identifying values – attitude – behavioral relationships as factors behind consumer decision-making and lifestyles, or the importance of emotional aspect in influencing commitment to change. Opportunities for change have been sought from commitment increasing and citizen-activating co-design (Heiskanen 2011; Re: Thinking Consumption 2012: 50.) Development projects have also outlined a sustainable future by presenting service models and broader design solutions in which supply leading to excessive consumption has been replaced by more sustainable models (e.g. Neuvonen, et al. 2014).

When considering the motivational factors of consumers and the obstacles to green consumption, a large proportion of consumers are concerned about environmental issues in attitudes studies, or at least respond to these concerns. On the other hand, they do not, in practice, start to change their consumption activities to environmentally responsible ones (e.g. Partidario et al., 2010, 2850; Power & Mont 2010, 2574; Re: Thinking Consumption 2012; Young et al. 2010; Gleim et al. 2013, 45-46). Consumer studies have often identified this attitude – behaviour gap. Puohiniemi (2011, 34) examines how this gap can be verified, among other things, by the fact that in their personal descriptions certain people easily respond of being concerned about the state of the environment, but the same people do not respond that they are prepared to act in practice. Although attitudes are more concrete and targeted capacity for action than values, they are a long way from real action. According to the 2011 analysis, up to two-thirds of Finns had responded of having concerns about the environment, but only one in two people had intentions to take action on their own. Consumers also implement their promises of action with different motivations, time use, knowledge, skills, skills and level of activity.

Many researchers of green consumption recall how social norms, cultural traditions and established customs of a particular context work within societal values affecting consumer behaviour (Heiskanen 2011, 49; Power & Mont 2010, 2574-2577; Gleim et al. 2013, 46-49.) Skill and Gyberg (2010,1878) describe this limited freedom in such a way that in western countries, according to the norm of individualism, an individual has the freedom to choose his own identity and lifestyle, albeit within a spectrum of socially accepted, often heavily consuming culture.

Jackson (2005, 29-32) describes how consumers are often locked in social expectations and cultural meanings, where material products and selected services communicate symbolic characteristics such as personal identity. Due to the culture of consumption and its nature committed to social behavioral voice, it is a complex decision-making process in which green criteria, even for consumers with green

attitudes, can form only one part of the whole.

Gleim's research group (2013, 45-53, 58) analyzed both qualitative and quantitative barriers to green consumption as multi-criterion reasons for decision-making and the subordinate or complementing role of greenness alongside other criteria. Obstacles to purchasing decisions are also complex: high prices of green, lack of care about environmental issues, lack of real faith in climate change, poor experience with the quality of green products, disbelief with companies, loyalty to own traditional choices, skills in seeking and choosing green, laziness, difficult to obtain green solutions, green options not available at all, lack of green products or lack of alternatives in responsible choices.

Our daily consumption is unnoticeably committed to everyday habits and frames (Jackson 2005, 28). Decision-making is influenced by aspects related to the practical operation and ease of everyday life. Possibilities for greener consumption timewise and as desirability may fail facing lack of knowledge, availability, faith in the quality of supply and the reliability of companies, price, established everyday habits, family type and form of housing. Consumption decisions are easily made with the short-term value of everyday life in mind. (Id & Laaksonen 2012, 44, 49; The Consumption dilemma 2011, 14; Gleim et al. 2013, 46-48.) There should be room for 'being green'. The pressures from lack of time and knowledge, the price and of environmentally responsible being perceived as expensive prevent green choices from being realized. (Partidario et al. 2010, 2856; Young et al. 2010, 22, 25; Gleim et al. 2013, 46-48.) Both Young's (2008, 22-27) and Gleim's (2013, 45-53) research groups that looked at the barriers to green consumption conclude that the lack of information on environmental impacts makes exploration and decision-making difficult. From the consumer's point of view, information is also often complex and confusing, cognitively requires a lot of resources and produces a sense of ignorance and uncertainty for the consumer. This difficult information situation occurs in the midst of a busy and otherwise complex everyday life, where long-term information gathering, and decision-making are difficult even in other areas.

Schwartz (2012) has developed an internationally applied hierarchy of 57 values. Puohiniemi (2011, 38-42) clarifies the value situation of consumers by the fact that even those with environmental protection high in this value hierarchy it is only on the seventh place. Typically, the safety and health of the family are perceived as more important values. The Partidario Research Group (2010, 2864) guides to consider such research results in promoting environmental impact. According to them, campaigns that are transmittable to health, ability, knowledge, social networks, trust, cultural values and identity achieve more impact than those that emphasize only ecological perspectives. When it comes to price, health and safety have been found to be more effective than nature conservation as sales arguments (Gilg et al. 2005, 502). Motivation to take care of the environment is often associated with children and grandchildren (Skill & Gyberg 2010, 1875). In order to change consumption, it is then important to emphasize personal health and family values rather than only universal nature conservation.

Even with lifestyle of voluntary simplicity (LOVOS) consumers who are serious about a moderate life personal engagement plays a major role in their commitment. Motivation to moderate lifestyles involves, on a personal level, ideological resistance to a busy lifestyle, excessive production and consumption. These are seen as eating mental and temporal resources from important issues such as close relationships. (Jackson 2005,25; Marchand et al., 2010, 1433-1434, 1437-1438.) Important personal meanings can be found in lifestyle issues, such as for the growing range of LOHAS consumers (Lifestyle Health and Sustainability) where health factors are often more important than environmentalism as such (Fine 2011, 22-23). The health issue is the most important fundamental value for most groups alongside the family (Puohiniemi 2011, 38-39). Clean nature is easily combined with personal health as clean and healthy food, air and water.

As a value researcher Puohiniemi (2011, 43, 46) emphasises, how the values typical of different value groups should be invoked. Young people are attracted to stimulus and enjoyment, things made fashionable in the eyes of a group of friends and offering

opportunities to spend time with friends. Many men are influenced by the appeal to them important performance and status value, represented, for example, by new technology. Combining opposing values, such as a car that combines low emissions (universalism), new technology and powerful engines (performance), is also possible and attractive when tempting this double way emphasized value-based groups with environmentally friendly solutions. A good example of this could be the attention paid to Tesla's electric cars.

Gleim's American Research Group (2013, 50-52) used various green consumption drivers as a criterion in a quantitative consumer survey of barriers to green consumption. Potential drivers included personal norms, consumer-experienced product efficiency and value, quality, confidence in advertising about green products and a desire to adapt to social norms. The group least interested in green consumption was not satisfied with green products, doubted their quality and had the least possible drivers, which could play a role in raising the interest. This group was also timid about pricing and they found it difficult to buy green products. They also lacked the know-how associated with green products, suspected the companies that produced them and did not believe that individual consumer actions were relevant to the well-being of the planet. The runner-up skeptical group was more receptive to the drivers discussed than the most skeptical group. They, too, had a low level of knowledge of green consumption opportunities, doubted the quality of such products and the companies that produce them, and did not believe in the individual's ability to influence with their own consumption impact.

The runner-up positive group was quite satisfied with green products and had positive buying intentions for these products. The potential impact of the drivers on them was stronger than with the two negative groups and the knowledge higher. This group also relied more on advertising and businesses in the industry and believed in their own opportunities to influence on the well-being of the environment through

consumption. The most positive group is the most knowledgeable, satisfied and willing to buy green products. They also relied most on companies in the sector and really believed that their own spending actions have an impact on protecting the environment. This study highlighted the importance of knowledge, perception and confidence in the quality of green products, as well as the belief in your own empowerment, and growing potential to make consumption increasingly green. The current level of drivers is very different for different consumer groups, and groups at the different levels require different communication and measures to transform their behaviors. (Gleim et al. 2013, 50-52.)

Han's research group (2014, 159-164) looked at message framing as a way to convey attitudes and activities in the direction of low-carbon consumption behaviors. When framing a message, a similar message is presented in either at positive or negative light. Positive framing emphasizes the benefits and aims to achieve the progress or doing the desirable thing, and negative framing aims to refer to loss or harm and thus motivate away from the events or things that cause a bad thing. Framing can be viewed as an incentive for awareness-raising, remembering and attitudes with behaviors. Han's research team had found results from previous studies that suggested that highlighting losses would be more effective in terms of participating in environmentally friendly activities than highlighting positive benefits. However, the results of the framing are contradictory because a wide range of factors are involved in the impact of framing: the individual's goals, knowledge, and emphasis on the direction of encouragement or loss in the way each person typically operates, how much commitment the issue requires and the exact details of the message. However, when considering the possibilities of a positive and negative message, we need to focus in a user-oriented way on many factors that affect the communication of the message and, in particular, on the effective factors before the positive or negative route of motivation can be decided.

However, many researchers point out that the mere consumption of environmentally friendly products and services does not solve environmental issues. The transition of consumers to a lifestyle of lower consumption can occur as changing societal values change social norms. Social norms guide and restrict social behavior without defining legislation. Efforts should be made to change them. (Power & Mont 2010, 2576-2592; The Consumption dilemma 2011, 14.) For example, the concept of a 'good mother' should be changed to valuable time with children as a social norm and not material consumption in the name of children's needs (SCORAI 2013, 43).

One direction of aims to change social values and norms is by discussing and studying the happiness economy. The Happy Planet Index has sought to combine ecological footprint, lifetime expectancy and satisfaction with life. The Partidario Research Group (2010, 2865) refers to enrichment in such thinking where wealth is other than material wealth and how many of the needs are non-material in their satisfaction. Jackson (2005, 24-25) analyzes how the production and experience of happiness and well-being is based on intimacy, freedom, security, understanding, participation, identity and the meaningful satisfaction rising from equivalent issues. Examples of meeting needs related to non-material consumption can be found in studies, such as when pioneers of sustainable fashion present underconsumption as a means of social status (SCORAI 2013, 50, 51). With status, distinction can arise from knowledge or from some personality traits, not only form material things. The needs were met in the interview materials of Marchand's research group (2010, 1439-1442), for example by self-expression, making your own products and repairing products. These activities brought meaningful life to the respondents.

The relationship with nature serves as one of the starting points for creating the meanings of environmentally friendly products. In trends such as the new luxury, clean water or silence in the midst of nature have become status symbols. However, the quality of the nature relationship determines from which issues and perspective

the protection of nature is worth highlighting for different consumers; whether man is only one part of nature or whether man acts as a natural exploiter (Järvikoski 2009, 91-93). The eco-village, which fosters old farming traditions, and the technical innovation solution, on the other hand, are reflections of different nature relationships that appeal to different consumers.

In order to attract consumers to change, it is effective to get people involved in designing new solutions, such as the discussions organized as a group on alternative policies and the questioning of old ones. Power and Mont (2010, 2580-2581) present the impact of commonly agreed practices on consumption as an example of how by parents agreed highest price for children's birthday gifts or clothes used at school to limit these consumption targets to reasonable ones. It is important to empower consumers themselves through joint planning and making concrete actions possible. Consumers are authentically engaged through shared social responsibility, through extensive social and relevant networks affecting values, both virtual and non-virtual: families, friends, hobby groups, religious places of worship and schools. A concrete examples of active community building are the jointly owned communities. (Heiskanen 2011, 54-57; The Consumption dilemma 2011, 14, 17-25.) Community development is linked to the emerging of an increasingly active consumer in the recommendation-based markets.

In practical everyday life, the right routines and ease of use are important factors that support environmentally friendly consumption. It should be possible to obtain information at the time of the decision so that, in selection situations, it is possible for the consumer to find products that are environmentally friendly. The products should also be both ecological and timesaving. Information should also be provided on the most environmentally destructive products or solutions, so that people can avoid them. In the studies, consumers even expect the selection set to be reduced by means of social regulations, because it will make selection easier. Choosing and reducing by

the companies themselves can help create a positive brand image. (The Consumption dilemma 2011, 14) Young's research group (2010, 28-30) points out that, in order to avoid cognitive stress, consumers believe in certain sources of information, signs or organizations that provide a shortcut to green choices. Eco-labels can provide easy information when the promotion target is a single product. The eco-department store concept is simple for the consumer, because then you can buy everything in the same store and be sure of the aspects that cherish the environmentally sustainable shopping. An ecological food basket model has also been found to be a practical and facilitative, comprehensive solution in the busy everyday life (SCORAI 2013, 90).

Gleim's research group (2013, 53-58) has through studies of barriers to green consumption proposed marketing strategies to support green consumption decision-making by raising consumers' own knowledge-level perception of green products, as this had been seen in previous studies to be relevant to the emergence of positive purchasing decisions. To this end, Glem's research carried out consumer tests, converting the number and format of data-based product tips in order to find out an appropriate way to raise the level of consumer knowledge experience and, on the other hand, to avoid the confusion and obstacles to green consumption caused by the sharing of excessive information. Like an umbrella, knowledge was seen to affect all other potential causes of green consumption, such as the effects of a single product, its potentially higher price, and noticing the buying opportunities and places. As a result of a preliminary experiment in product tips was that detailed verbal cues instead of numerical ones and a larger number of clues have a positive impact on the intentions to buy green products. Apparently, the experiment did not focus on visual cues, which would have been an important addition to this experiment and its results, because it is often the visual cues that the consumer notices first when shopping, for example, in a grocery store.

The importance of visual cues and information as a purchasing decision adjuster

has been studied by Mosteller (2014, 127-135), who analyzed from a previous study how in retail shops positively loaded visual illustrations had probably re-framed the attributes behind the purchase decision. His own conclusions about the effectiveness of visuals in marketing were related to the facilitation of remembering, for example through multi-channel experiences (senses and verbal channel) and the participation of sentimental experience. Visuals are also related to the concreteness of things, which makes it easier to process and remember issues. In addition, it often builds context for things, which is also a factor in decision-making. All this provided when the visual has been used in an appropriate and communication-relevant manner. The ease of visual processing and the ability to steer actions with the help of visuals in the context of sustainability seem to be especially associated with negative framing. In this case, it is possible to show consumers concrete illustrations to demonstrate what happens if action is not taken.

In the recommendation-based market, the importance of social media as a route for attitudes, opinions, dissemination of information and motivation is, of course, emphasized. This peer-to-peer communication, which is effective today and sometimes goes viral, happens in multiple media channels and is multisensory. Russel's research group (2014, 223-240) used data mining and new network analyses to study Twitter's energy-related discussions, looking at the interest, content and context of these discussions. The discussions changed over time and were influenced by events that stimulated discussion, such as the reform of national regulation, the launch of new technologies and media events. However, activating communities and various active promoter individuals are also important for social media, as initiators of discussions and mediators of information. It was also possible to spot these individuals through data mining and extensive data analysis carried out in the study, as well as others actively involved in the discussion. From the point of view of content, it is possible to find out the vocabulary used by participants in social media networks and the themes of

discussions, as well as the concerns and activities related to the themes. Such studies are a way of thinking about measures such as, how it is possible to create, disseminate and maintain peer discussions that enhance positive change through social media communication. These include, for example, organizing appropriate activation events.

In the context of decision-making, concrete infrastructure is an important factor in guiding the actions. The impact of the built environment can be seen, for example, in enabling cycling or in the fact that there is room for waste sorting at home. In a qualitative study of the barriers to buying green products by the Gleim research group (2013, 47), one of the main obstacles was the hard-to-find placement of such products in stores. Puohiniemi (2011, 47) also complements this perspective by exemplifying how physical infrastructure guides us with practical limitations, such as road bumps and narrowing parts of roads that guide us to drive slower. Power and Mont (2010, 2575) remind us how concrete support for behavior pays off: recycling when it is made practically possible even if the person does not have sustainable attitudes. Marchand's research group (2010, 1439) also clarifies the importance of designing physical products with research results in which consumers felt that simple products would last better and longer and be easier and cheaper to repair. Concrete aspects of simplification, maintenance and renewal should be taken into account in the design of environmentally friendly products and services for longevity. This also requires the organization of maintenance and repair services.

The idea of a social dilemma can also be attached to the age of consumption. Gleim's research group (2013,47) describes how green products can demand more than others due to higher prices, search for information and uncertainty associated with their qualitative efficiency. Economic factors that affect the consumer include more than just price. The time and resources used to search for a product are part of the price in relation to the benefits of the product and the benefits of the product must be greater than this total price, including the efforts required and, in comparison with

the efforts required by alternative solutions. It is precisely in this sense that the current cheap price often beats future savings as an alternative, for example, to the more difficult-to-find and hard-to-understand alternative of energy-efficient and expensive household appliances. Moreover, the advantage of saving the environment over a long period of time is difficult to calculate to the benefits of the product. It's easy to stick to a familiar solution because finding and using it doesn't make a lot of trouble and it's a sure choice as a product experience, and it doesn't pose a risk. It doesn't disappoint in use, for example.

As consumers typically focus on fast product benefits rather than long-term costs, the long-term impact of solutions should be described in more detail. Engagement strategies that build opportunities for quick recovery and feedback are effective. (The Consumption dilemma 2011, 14.) Although, for example, energy saving devices do not confer an advantage on the consumer until after a long period of use, their purchase may be accompanied by other advantages which give the consumer positive feedback at the time of purchase. Heiskanen (2011, 50) states that the unnoticeable nature of things that produce emissions of other environmental harm, the invisibility of the positive environmental effects and the distantness of long-term advantages make it difficult to consume green. For example, in an interview study conducted by Skill and Gyberg (2010, 1877), consumers paid concrete attention to visible issues such as littering, which was considered to be as a concrete and small act worse than, say, travelling to remote countries. In discussions about travelling to remote countries there was a tendency to criticize their dirty environment. It was not perceived as a small evil compared the big environmental impacts of travelling. The interviewees also did not highlight, for example, how the Western North spends more than its fair share of the world's natural resources.

The English study by Gilg's research group (2005, 496) also attached concreteness to what was seen as possible to influence. Consumers are most likely to operate

sustainably if they felt that their actions had an impact. According to the Partidario's research group (2010, 2852), the concretization of solutions and their placement in the local situation are important development measures, as the goals of individuals and communities are often local and dependent on a particular social context and situation of use. In the meta-analysis of the findings from previous studies, Lee's research group (2014, 88-103) found that holistic thinking motivates endurance-related activities more than analytical thinking. Holistic here refers to thinking that connects an object to its field of activity rather than an analytical one in which it is separated from its context. In holistic, context-bound thinking, the impact of an object on its environment and, through the environment, on context-bound systems is more clearly understandable.

Systemic problems and their systemic solutions are very difficult to understand. Skepticism about whether my actions make any difference is partly related to the complexity of environmental problems and solutions. It is seen that one's own good deed will be watered down if the whole big system does not work in an environmentally positive way. Heiskanen (2011, 50) refers to how there are two different things about consumption, on one hand which is seen as ecological, such as small eco-deeds and on the other hand what really would be it, such as a lifestyle that strives for moderation. Small eco-deeds are individually easier and concrete than systemic lifestyle change, which requires multi-faceted information retrieval, a wide range of effort-making actions and a change in the whole chain of action different from the learned and culturally-socially accepted norm (Gilg et al. 2005, 488). The complexity and contextuality of sustainability also hamper the credibility and utilization of information (Partidario 2010, 2852). Researchers stress how, in order to gain trust, information should be clear and scientifically presented. They also note that information campaigns from above produce little impact. (Gilg et al. 2005, 502; Heiskanen 2011, 49). According to studies by Tan and Johnstone (2011, 4-5), greenwashing by companies has further increased cynicism and doubts in consumer perceptions about what is green.

However, we should also be careful when it comes to sharing information alone. In addition of rational thinking with attitudes and values also emotional feel has influence. Puohiniemi (2011, 31) reminds us how knowledge and emotion are combined in purchasing decisions, which is why sharing information alone is not enough. Tan and Johnstone (2011, 5) through their studies on this point out that environmental feeling can play an even more important role than environmental information. Since consumption is symbolic and emotional, according to Power and Monti (2010, 2574), a rational pattern of choice does not explain actual behavior. The Partidario research group (2010, 2856) does not believe that rational influence, such as appealing to savings, would have an impact when people in everyday life act through subconscious, social, cultural and psychological motives. According to Puohiniemi (20 11,32-41), emotional appeal and raising desire are important because after desire, rational claims get through better. More information is also not necessarily good. Consumers rarely consider the price-quality ratio of each purchase. Raising the value of brands, reliable brands and credible and simple information are important. Social signs that indicate the impact on others may also be an effective means. (The Consumption dilemma 2011, 14) Information should be provided, but not in a complex and difficult form in the midst of busy everyday life. In addition to information, emotions are important for motivating and engaging the consumer.

However, this does not mean underestimating the consumer who has already become skeptical in the face of greenwashing. The ever-expanding number of marketing communications, which have highlighted the ecological benefits of different products, have made consumers wonder what to believe in. The continuity and parallelism of the company's overall activities with their supposedly ecological products appears to play an important role in building credibility. If there is inconsistency and hints for cheating, it will have a major impact, not only on credibility and willingness to buy, but also on the reputation of the company. There was

skepticism both towards the motivation of companies to turn green and also about the extent to which their products actually represented ecological benefits. (Gleim etc. 2013, 47-48.) On the recommendation-based markets, these doubts and lack of confidence are important issues, as negative and skeptical messages spread very easily on social media. However, trust is also a matter of emotional construction, not just knowledge. It is worth considering the means of constructing trust, for example, using different means of transparency.

An American study sheds light on the perspective of transparency by looking at consumers' views on the marketing of green products and then comparing the results with the guidelines and rules shared by the public sector on the subject. The result was that regulations often intervene in matters that do not actually interest the consumer, such as the amount of renewable energy and do not pay attention to issues such as life cycles. In the results of this study consumers seemed to expect that green communication in marketing would be authentic and that there would also be context for claims to compare them with, such as products from other brands. (Sheenan 2014, 51-54.)

It is also important to note such research perspectives as Power's and Monti's (2010, 2577), which have revealed that sustainable lifestyles seem difficult and boring. Tan and Johnstone (2011, 3) analyze that green consumption is perceived and associated with people who go to the trouble and spend their time recycling, carpooling, walking and cycling, as well as making informed choices. Green consumption is perceived as unattainable ideal when it is considered to require money, time, knowledge, living in the right place, self-discipline and readiness to make personal sacrifices. It is seen as different and exclusive in relation to normal consumption. Greenness is also accompanied by a stigma of fanaticism that causes it to stand out when the stigma threatens an identity deemed appropriate and is demanding (Skill & Gyberg 2010, 1871, 1874-1882; Tan & Johnstone 2011, 3.) Tan and Johnstone (2011, 4-5) guide developers

to think about how to make green consumption look easy, accessible, and a green product to match the image of a common mass product. Although green is a serious issue, approaches should be lightened to include even humor and personalization that can be identified.

As a specific end-of-product decision-making issue, Kapitan's research group (2014, 56) highlight a range of consumer activities that seem to be possible: reintroducing to use, redistributing, retuning, donating, delivery to recycling, and delaying the purchase of a new one. These researchers argue that there are certain categories of consumers that particularly favor using the product functions of the second cycle. These include users of recycling shops, lovers of classic, vintage-type old goods and consumers engaged in voluntary simplification, setting an example of owning old-fashioned, vintage or recycled products.

However, the researchers also point out the obstacles for re-use guidance and to the use of these activities. Because fear of loss is a very strong and evolutionary feeling in us people, consumers can suffer and withdraw from giving up unused goods even when there are far too many of them. Some products also carry important positive meanings, even if they are not in practical use. Giving up products can take the place as a donation, but as a sales process, consumers must also convert the products into commercial goods by cleaning them up and putting a price on them. Even this can be difficult. (Kapitan etc. 2014, 60-63.)

Kapitan's research group (2014, 64-66) also points to the fact that consumers may even have experience of a certain type of pollution when buying second-hand products. They may feel that there is some dirt or mental contamination in the used product because it has been treated and used by another, unknown person. We are used to the idea of 'always new and clean', even if new products require resources and pollute more than recycling the old one. Of course, the stigma of another person in a product can also turn positive, such as when the former owner has been someone

admired by the public. Products previously owned by famous people can even be sold at a staggering price.

A comprehensive survey of 42 homes in Lahti showed that many homes had a lot of recycled goods in use in some way. Old goods had become a legacy, borrowed or received from friends or bought from flea markets. Of the 42 people, 18 automatically said they would consider buying something new first, 15 second-hand and 12 would have thought first about the intended use of the product. When buying things used, people didn't want to buy products that had hygienic issues, such as swimwear, underwear or linen. Practical products, on the other hand, were thought to be easy to buy second-hand, such as cars, game consoles, clothing or sports equipment. Similar products were attached to the possibilities of sharing and borrowing: cars, garden and other tools, trailers, household and sports equipment, suitcases and small vehicles, or rarely necessary leisure equipment, cottages and even luxury goods. Lending one's own rarely used goods to others was also seen as possible. Unused products at home were not recycled, especially due to sentimental meanings, but it was possible to see from the observations that people had many other products unnecessary at home than these meaningful products. Most were clothes and shoes, then books, dishes, interior decorations and toys. (Kälviäinen & Koivisto 2017, 70-73, 77.)

Lahti households knew a wide range of flea markets, charitable organizations and a waste station where unnecessary goods can be exported for recycling. Additional services, in particular transport services, were wanted from these centers. The marketing and information of recycling sites was also seen as a shortcoming. Help was needed with sales pricing of old products, own sales routes for special goods, photography assistance for online services and these catalogues for searching things, and also overall assistance for surveying household goods. Separate containers for recycling would also be needed for the goods. Flea markets were seen to be shopping places that should be easy to go to, they should be in good marketplaces, clean, goods

pleasantly displayed, customer service to be good and even coffee would be nice to have on offer. More than half of the people went around these places motivated by ecological reasons, but economic considerations were also seen as important. People felt comfortable when good products got a new use, for some recycling was accompanied by the joy of unexpected discoveries, and the desire to help was also cited as the reason for recycling. The interviewees also gave a lot of suggestions on how to make it easier to recycle. Of these, the possibilities of transport services were the most important, but also well sorted guiding and equipped recycling points in the suburbs and specific campaigns were mentioned. (Kälviäinen & Koivisto 2017, 74-78.)

7

Consumer groups outlined through previous research

Earlier research on consumption has produced results on the attitudes of different consumer groups towards environmental sustainability and examined the reasons behind this attitude. Finding out how consumers are motivated has revealed the things and themes through which consumers are motivated in relation to environmentally friendly solutions and activities. These studies describe also what the consumers could really need more or what hinders them and, on the other hand, supports environmentally friendly activities. The information responsible for Finns has been published by Heiskanen (2011), Id-Laaksonen (2012), Puohiniemi (2011) and Salonen's research group (2014) in their articles, in which they seek to use research data to advise practical ways to make citizens' activities more environmentally friendly. These results of studies targeting Finnish consumers can be supplemented, especially with western international consumer research data. It is possible to improve the use of both the operating and motivational interests of different consumer segments and for innovation activities increase the user information about what prevents or supports users' sustainable operations. The user research based starting points provide developers with tools to make environmentally friendly solutions that are user-friendly, acceptable and make it attractive for the users to change their accustomed activities.

Research into green consumption has examined the policies, attitudes, selection criteria, meaning, values and nature relationships associated with possible environmental consumption or rejection of it. On the basis of these studies, it is possible to group consumers, not in any positive way or in different ways inclined to environmentally friendly groups. There are therefore different groups of users among the consumer population: some are indifferent to green practices; others take green consumption seriously. Then there is a grey area between these extremes.

In diverse consumer groups a debate can be found on the differences between irresponsible, normal and fanatical consumption as experienced by consumers themselves and through their related attitudes. Skill's and Gyberg's (2010, 1871, 1874-

1882) Swedish in-depth interview survey of 73 households describes the impact of building communal behavior and identity on the practices of potential environmentally friendly consumption. The majority of households position themselves between "irresponsible" and "fanatical," an area of "normal" and rational responsibility. In relation to the irresponsible, 'normal' households described themselves as doing better than the littering or non-recycling consumers. Those who devote them theme entirely to environmental issues were described as fanatical and radical. Reasonable activities were recycling, buying eggs from free-range chickens or ecological driving. The fanatical behavior people were the ones who refuse to buy anything produced with oil or who do not travel by car. For the majority who have defined their responsibilities between irresponsible and fanatical ones, moderation was related to certain everyday activities for the environment and in favor of greener alternatives, but not to the actual reduction in consumption. What is interesting for innovation in such consumer groups targeted research is the alienation seen by themselves of a lifestyle that is radically different from that of the consumer society.

The Scottish Middelton (2006) reported three types of consumers as classifications of green practice. In the most common group consumers implemented only one sustainable approach, such as recycling or the use of green energy. The search for information for such consumers was selective and took place at the time of selection, although it was active depending on the subject matter. In the second group there was a feeling of guilt about late activation, new green practices were gradually added at product level, and even sacrifices were made in the prospect of impacts. However, the fact-finding was passive, and it confined uncritically to opinion leaders. The third group was actively seeking information to lower their impact, sustainability was a priority, and they had a broad understanding of the different aspects of environmental impact. The devoted sought information even at company level and were very critical, preferred offerings outside the commerciality of the average, shops, products and

information. However, these third group members generally had one conscious and self-justified exception to the green lifestyle.

An online survey of 6224 respondents conducted in 2012 in Brazil, China, Germany, India, the United Kingdom and the United States examined consumers' attitudes, motivation and behavior in relation to sustainable consumption. The segments found were committed, active advocates by 14%, who were fact-interested and disseminated these facts, aspirationals by 37% simultaneously highlighting both stylish peer-to-peer styles and sustainability, practical exploiters by 34% looking at price and level of functionality, skeptical and indifferent by 16% ignoring the severity of environmental problems and possibilities of individual actions. (Re: Thinking Consumption 2012, 2, 38-46.) The practices of a large group of aspirationals are also reflected in a number of studies focusing on the situation of Western consumption. These studies report how the high cultural awareness-based consumers of global citizenship, idealism, expertise, exoticism and authenticity have turned to search for environmental friendliness (Nyrhinen-Wilska 2012, 20-24; SCORAI 2013, 63). The growing importance of the aspirational group refers to environmental protection as a trend, but also more generally to the rise of sustainable development into a trendy fashion phenomenon known as eco-chic. Although commercial fashion is easily understood as an anti-sustainable phenomenon, the power it produces to meet the need for human social acceptability should be exploited in efforts to promote sustainable development, even though it involves the same mechanisms of action as commercial activities that emphasize continued new consumption. (Barendregt & Jaffe 2014, 1-10.)

Of course, green consumers can be carved out in many other ways than in the name of environmental awareness and the strength of a reasonable approach aimed at green consumption. From a green marketing perspective, Ottman (2011,29-32) describes the different interests that can be used to motivate consumers to do green activities. She brings up the themes of health, resource savings, animal love and

outdoor activities in the nature.

The Finnish perspective on different types of sustainable consumer groups is represented by Salonen and Helsinki based Kuudes Kerros brand consultancy Conscious Consumer Joint Project 2012-2014. The project aimed to find different groups of sustainable consumers among people living in Finland. (MARK 2014.) The study investigated and its results present different ethical and ecological consumer aspirations and motivations in terms of sustainable development, as well as their intertwining. People's orientation was examined in four fields in the light of altruistic, self-well-being-enhancing and selfish tendencies focused on their own well-being, as well as motivation through external aspirations or internal values. (Salonen etc. 2014, 60-62.)

The qualitative semi-structured interviews in 2013 were conducted at the participants' homes in 37 different locations in Finland. The themes related to different types of consumer choices and their causes, awareness of ecological and social challenges in relation to consumer behavior, amount of consumption, and the relationship of quality in the quest for sustainable consumer behavior. The analysis drew out different consumer profiles in relation to responsible consumption. A quantitative survey of independently living 1023 Finns aged 18 to 73 was conducted to test the analysis of qualitative data to validate the quantitative share of profiles within Finnish citizens. Of them, 512 were women and 511 were men. (Salonen et al. 2014, 63-66.)

The resulting consumer profiles of sustainable consumption in Finland were Devoted 14.2%, Uncompromising 9.4%, Caretakers 23.6%, Curious 4.6%, Autocrats 4.4%, Ambitious 13.9%, Dreamers 11.2% and Bystanders 18.8%. (Salonen et al. 2014, 60-66). (MARK 2014). Those who are convinced responsible consumers represent both internal and altruistic motivation, uncompromising in particular internal motivation, but not so strongly altruistic, caretakers are set between internal and external motivation, but are focused on altruism. The internal motivation is emphasized also with curious and autocrats, but the curious are not as selfish in motivation as autocrats. Ambitious are

selfish, but like caregivers, they are between internal and external in their motivation. Dreamers are driven by both egoistic and external motivation and bystanders are driven especially by external motivation, but between selfish and altruistic interests. (Salonen etc. 2014, 67.)

Salonen and his research group (2014, 68-76) used both qualitative and quantitative data to analyze patterns of consumption and consumer groups belonging to different profiles, as well as possible scenarios for the future. These kinds of studies do not only break down consumer groups into those committed or unaffiliated to sustainable consumption, but also to the different types of motivation that define these different groups in relation to sustainable consumption. Green, ecological consumption is part of the discussed broad theme of Sustainable consumption that includes also ethical perspectives. Summarized results from the consumer groups were as follows:

UNCOMPROMISING (9.4% in 2014) are a group that requires quality in everything. They are against mass consumption and ready to see trouble in finding the right product. Trusted labels and designers are important to them. They learn the right choices one step at a time and influence other people through their own example. Uncompromising behavior is influenced by media from magazines to blogs, trusted brands, people in their own social circles and experts from different fields. The most important criteria for consumer behavior are quality, aesthetics and ethical and ecological values.

DEVOTED (14.2%, in 2014) are consumers whose main criteria for consumer behavior are internally motivated ethical and ecological values. They are aware that they are part of a larger whole and selflessly compromise on their own comfort for the common good and take a stand on behalf of those in need. However, they do not feel that they are missing out on anything but enjoy the opportunity for internal growth produced by their activities and values. They are aware of the background of the products and also share information with others. They borrow, tune and re-introduce things to further use and act in a community-based manner on using products. They are particularly influenced by social groups sharing the same values, experts from different fields and nonconformists as alternative sources of information. They are interested in different lifestyles and cultures. The varied available information is carefully examined by them and used to form personal view. The devoted are possible agents of social change. Content is more important to them than form, and through it they get excited about new solutions. For example, they may ask whether the possibility of mobility is important or a car. They will be joined by more consumers in the future, because their lifestyle includes interesting elements of satisfaction and happiness, as well as a new kind of communality and it is producing different ways of working. Such practices are effectively spreading through social media.

CARETAKERS (23.6% in 2014) are the largest group in the Finnish altruistically emphasized value structure. At low incomes and with high age structure, caretakers live mainly in rural areas and small towns. They value tradition and security. They are mainly motivated from the outside. However, the increase

in internal motivation is reflected in the fact that they feel they can influence the surrounding reality through their choices. Their motivation is based on sentimental concerns and they have also become concerned in recent years about the environmental friendliness and ethics of consumption. However, they balance its implementation with everyday priorities, such as a steady life, family orientation and related customs and norms. Family is also a motivating factor for them. The criteria for consumption behavior involve family well-being, traditions, smooth everyday life and reasonable price, as well as avoidance of excess. The caretakers buy for concrete need. They are characterized by picking berries and fishing, as well as horticulture. They are attracted to the transparency of things and, once they have received information, they get involved in things such as avoiding additives or critically looking at production chains.
As internal motivation grows, they become more like the convinced and the uncompromising. They are also interested in new kinds of services that offer, for example, borrowing tools or groups of hobbies related to repairs. Sensible and small new solutions to everyday life attract them.

CURIOUS (4.6% in 2014) are a group of mostly men who are critical, unyielding and ambitious. The pursuit of life that looks your own, rationality and price are important to them. Although sectoral way focused they want to find out about claims, demand solid scientific arguments and are happy to share information with others as well. They are influenced by information from a hobby group, user experiences online, fact media and news. They invest a lot of money and research in some areas of passion, but otherwise limit the selection criteria.
They have a strong intention of responsibility, but this is not yet externalized

as large-scale sustainable consumption. However, they tolerate uncertainty, go outside their comfort zone and always want to delve deeper into new data sectors. If awareness of the impact of choices becomes a passion for them, they can develop into truly responsible consumers who also believe in the power of cooperation. They are also fascinated by technological solutions.

AUTOCRATS (4.4% in 2014) are those who question mainstream culture or general norms, are driven by internal motivation, for whom genuine authenticity, avoidance of too common habits are especially important, as is autonomy. As rather selfish and international people, novelty, creativity, style, experiences, stories, adventure and pleasure, and extreme phenomena are interesting to them, not the common good. However, these characteristics of consumption include the possibility of radical change, especially if a circle of friends that is important to them joins in. They understand that responsibility is a trend today, even if it is not yet implemented. Seeing a sustainable lifestyle as authentic and emphasizing spirituality are temptations for them to have a more sustainable, less materialistic lifestyle.

AMBITIOUS (13.9% in 2014) are high-income career people in big cities. They have defined elements of quality life and strive to live by the standards they define. They value expertise and first-class service that frees up time for what they consider essential. Selfish search for personal interests occurs in their

behavior in areas such as improving functional capacity and healthy food. The most important factors for consumption behavior are external motivation, the fostering of one's own image, influencing other people, health and well-being and efficiency. They do not believe that an individual consumer can save the world, but seek to influence through work, or through organizational life. When the benefits are sufficiently tangible, they pay a higher price for an ecological product, although at the same time it must also appeal to their own values. However, when it comes to the use of services, they also represented selfless motivation and can switch from products to services. Health and well-being issues also serve as a source of motivation for this group to change their consumption habits. Ecological luxury in everyday life also appeals to them. Their behavior is influenced by experts from different fields, business gurus, non-fiction and life management guides, skilled agents and news. They are interested in new responsible companies and may also change their own habits and influence to change processes. When they act as entrepreneurs, they can also influence the change in production methods and what is produced.

DREAMERS (11.2% in 2014) are mostly low-income southern metropolitan residents. Emotions, desires, trends and the behavior of others, as well as self-realization, affect their consumption. Shopping cheers them up. They want to learn new things, but they find sustainable consumption difficult and expensive, and they have no desire to make a social impact, for example politically. They are motivated from the outside and driven by fashion trends more than individual thinking. They are interested in social media and games. They have feelings of guilt for excessive consumption and hopes of changing

their activities to be more rational and sustainable. It is easier to lure them behind social sustainability in helping a particular emotionally perceived object than through extensive environmental issues. A change from quantity to quality in their consumption could be possible and the interest in do-it-yourself in their activities is related to sustainability.

BYSTANDERS (18.8% in 2014) are those living a steady life, with low-income in small communities. In particular, they do not think about the consequences of their actions but seek not to stand out. For example, they recycle because that's what they're supposed to do, but they can't connect it to larger issues. Bystanders buy either the most affordable or familiar and safe, preferably also Finnish. They only buy for need or when the former product is already broken. As a result, bystanders are often an ecological group unknowingly. The criteria for consumer behavior for them are cheap price, buying only for need, accustomed norms and customs, and ease of things. They do not believe they can make a difference in society, even though they act a little more politically than dreamers. Like dreamers, they are emotional people who are more affected by social injustice than the possibility of ecological destruction. They are drawn to things that make sense and remind them of good times past, including non-urgency. They are not fit for rapid change, but they can participate in a long process. Gradually, their circle of life is expanding. As they take a more selfless direction, they especially think that future generations should have a good life. Their own children are also influential when it comes to changing their behavior. (Salonen et al. 2014.)

The distribution of these consumer groups among Finnish consumers has been examined by a responsible consumer in surveys both in 2014 and in 2016. Obviously visible below in the figure 4 is the increasing level of level of bystanders resulting from the economic recession, and the decreasing proportion of caretakers, more prone to responsibility, which has fallen over the two intermediate years.

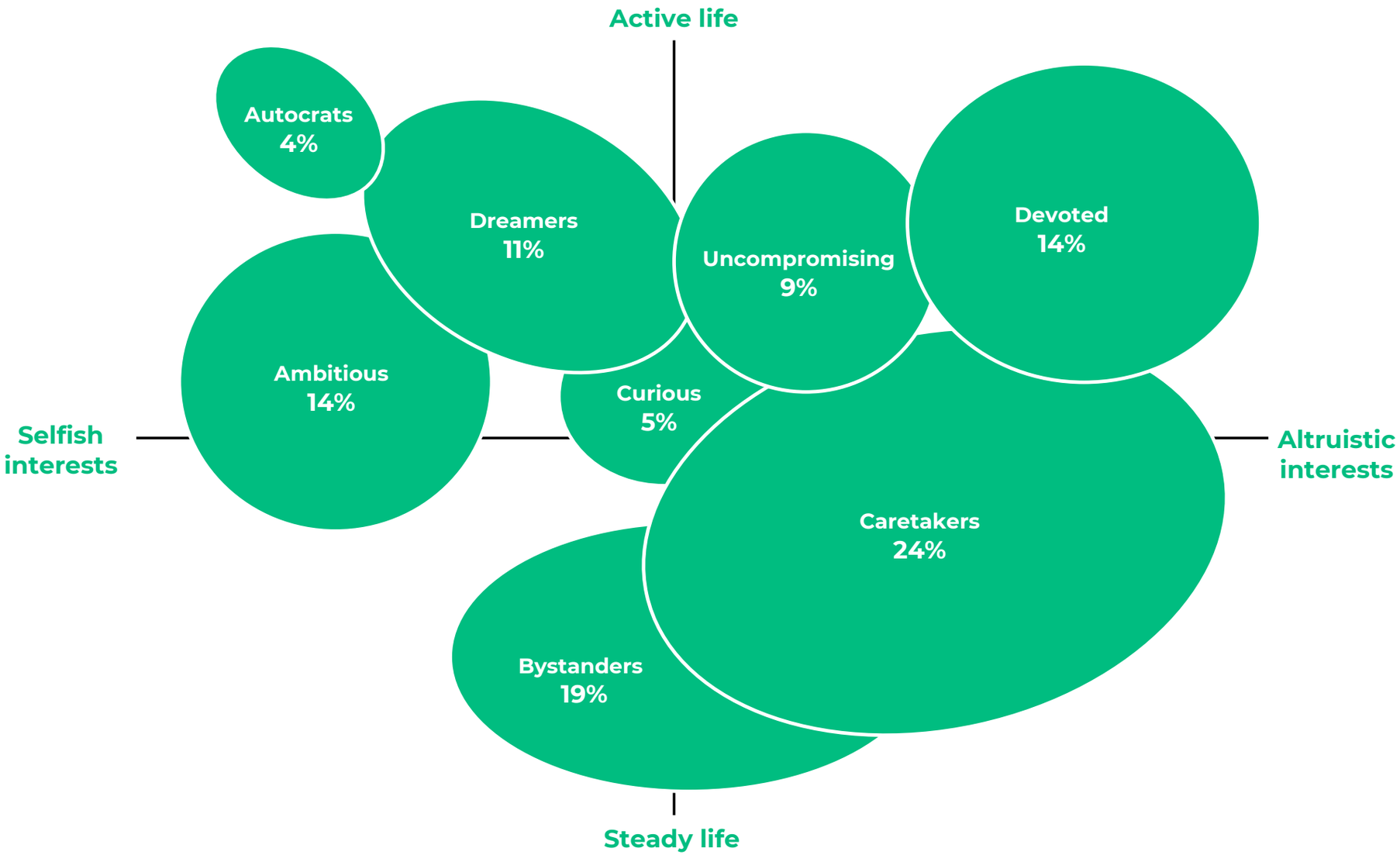


Figure 4. Finnish responsible consumer groups found in consumer profiling. (Salonen etc. 2014) Kuudes kerros design consultancy and the Conscious Consumer Research Group's exhibition 2016 (Helsinki Design Week 2016 Kaapelitehdas) highlighted the change in the size of these consumer groups in a couple of years (figure Kälviäinen 2015 supplemented with 2016 results).

The consumer survey of Sitra and service design agency Palmu (2017, 2-4) identified with a combination of 11 qualitative interviews and quantitative studies seven profile groups that describe the motives and values of the different Finnish consumers. Profiles distinguish percentage groups of Finnish consumers in the sense of how low impact consumption behavior, smart consumption, is performed by different groups. The decision-making process on consumption is influenced both by the permanent values and by the factors in the everyday situations, where eco-friendliness and the reduction of consumption are only one of these factors. In the profiles people with certain motivational aspirations have similar values, attitudes and motivational factors behind consumption in the context of housing, eating, exercise and other consumption. Consumption decisions are based on emotions and pleasures or facts and rational issues, and the impact and benefits of the choices are only directed at themselves and their own loved ones or are perceived to have a greater impact and purpose.

The profiles generated were as follows:

A comfort-minded enjoyer (13% of Finns) wants life to be easy and of high quality. They invest financially in themselves in the name of hobbies and eating out, for example. They are not prepared to compromise on their comfort for the sake of ecology, nor do they believe in the influence of the individual consumer to save the world. To the extent that they experience, that environmental problems do exist, they believe that technological developments can solve them. The comfort-minded enjoyers are motivated not by giving up, but by getting a new one and facilitating life. They may be tempted to wrap the requirements of ecology into new experiences, pleasures or positioning. High-quality and technologically advanced products and services that evoke a "WOW" feel or make life comfortable and enjoyable are for these consumers. Status and quality, even luxury, are worth communicating to such consumers, for example by taking advantage of trendsetting. Those representing this consumer profile

could be tempted to buy high-quality local food, minimize food waste by planning groceries, work remotely, heat their home with a geothermal or air source heat pump, or buy Tesla. (Sitra & Palmu 2017, 5-7.)

For a follower direction seeker (9% of Finns) social or environmental themes are difficult, distant and alienating. They buy for the pleasure of buying or in the name of a benefit like saving money and doubt or disparage many environmental issues or their own opportunities in relation to them. Their choices can be influenced by the example of the people they value, as well as by events coming sufficiently commonly acceptable such as the Meatless October or the Cleaning Day. However, the efficient activities around sustainability must be easy for them. It is worth trying to influence these trendsetter following people through reference groups and opinion formers and to be visually impressive and inspiring. It is worth offering them a comparison with others, for example in the form of tests that are spreading virally. It is worth avoiding the big world issues and the big and heavy social themes. Premium pricing should also be avoided, as environmentally responsible should not be costly. Representatives of this consumer profile could be interested in buying surplus food from a restaurant, reducing meat consumption, participating in the Meatless October or the Cleaning Day, increasing the use of public transport and even giving up their own car. (Sitra & Palmu 2017, 8-10.)

For the everyday life survivor living in scarcity (12% of Finns) basic surviving takes up so much resources that there is no room for thinking or implementing one's own values. The clever consumption by these people stems from the scarcity of consumption and satisfying just the essential needs. Instead of quality, purchases are determined by cheap price and short-term benefits. They do not feel that their actions have an impact on the state of the environment and the need to avoid hassle determines their places of purchase. Getting out of the survival spiral could have a positive effect on increasing self-belief and empowerment. Everyday survivors could be influenced by making the basic

need satisfaction gratifying at no extra cost and by communicating clearly in different situations, channels and environments, especially about affordability. In products and services, you should focus on basic needs and make it cheap, at least the same price as non-ecological solutions and effortless. Representatives of such a consumer profile could be interested in minimizing food waste by carefully planning food purchases, repairing old goods, minimizing electricity and water consumption. (Sitra & Palmu 2017, 11-13.)

Impulsive shoppers (13% of Finns) enjoy shopping as a fun pastime and dwell in impulse purchases, where quantity typically replaces quality. Comfort, advertisements and newspaper stories inspire such a consumer. Although such consumers see ecological values as important and recognize, for example, the downsides of low-cost production, they do not feel bad about shopping cheap items and these concerns do not guide their consumer behavior. In order to maintain a good vibe, ecologically sound choices should be gratifying, not more needy and more savings than costs. For the impulsive, it is worth branding and communicating inspiringly and spectacularly, especially at the time of purchase. They can be offered solutions that are attached to everyday life and designed to make it easier. The change in their activities can be influenced particularly by a better example shown by children and other loved ones. An impulsive shopper could be tempted by the preference for local and harvest season food, which is already readily available, the purchase of surplus food from a restaurant, recycled alternatives for shopping and the more general use of public transport. (Sitra & Palmu 2017, 14-16.)

Traditional voice of sense (24% of Finns) chooses high-quality, practical, repairable, and also domestic and local products. These consumers find many new things useless and appreciate traditional actors. Although they are skeptical about arguments that emphasize green, their consumption is environmentally efficient in many respects, as it is guided by common sense and frugality, even in matters such as water or energy use, waste recycling and accurate planning of groceries. They are motivated to act

on the economic and time-saving benefits and domesticity, but new technological devices may seem difficult to absorb and raise doubts. They too see the actions of an individual on a global scale as small. In consumer communications, they value facts and understandable research data over a long period of time and everyday benefits and savings instead of emphasizing environmental friendliness and greenness. Domesticity and emphasis on long-term activities are also important, such as "traditional operator" or "years of experience". These people are also influenced by children or grandchildren. The voice of sense may be inspired to switch to geothermal heat or acquire an air source heat pump, minimize electricity consumption through a new service or join the local food circle. (Sitra & Palmu 2017, 17-19.)

The feel green trendsetters (9% of Finns) see themselves as an ecological trendsetters who, in addition to eco-friendliness, compare alternatives and carefully select the brands they use. As a highlighter of individuality, they are working hard for their own lifestyle, looking for suitable solutions that are often good feel small producers. Being at the forefront of changing consumption habits in an environmentally smart direction means favoring local and harvest season food, reducing meat consumption and precise sorting of waste. Eco-friendliness is even a duty and involves a claim to play a role model, which often steer consumption towards higher-quality and more sustainable choices. Since the profile still involves longing for pleasure and luxury, and avoidance of excessive labor, such a consumer may slip to spend heavily, for example through investing in travel or style. When designing for feel greens, it is worth emphasizing the characteristics and quality of an environmentally friendly alternative in addition to environmental friendliness, self-appearance, and the specificity of the product, as well as quality, durability and longevity of the purchase. As brand qualities it's worth pointing out how someone is a little better, a little more efficient, and a little more decent. The feel green can go from vegetarian to vegan or from the Meatless October to meat-free for the rest

of their lives. They are suited consumers for remote days or a lending service, or even for setting up a lending service and investing in Clean-tech. Services that facilitate the repair or fixing of goods may also be of interest. (Sitra & Palmu 2017, 20-22.)

The resourceful everyday green (20% of Finns) gets orientated and is willing to give up own comfort to be greener. As consumers they are thoughtful and attentive and believe in quality in the name of sustainability. Resourceful everyday greens work according to their values and are willing to pay for them with money and effort. They believe that you can influence the state of the world and they do not let external things or people get to them. They are motivated by reducing consumption, reducing waste and reducing the injustices of the world. Domestic and local small-scale production is also a motivation for them, while they experience fear and avoidance for the technological and in the face of new goods. For everyday green, it is worth designing a product or service that is practical, technologically easy to use and helps to reduce the environmental load of an individual person in concrete terms. The content issues worth using are sustainable, domestic, responsible and environmentally friendly or creating a good green reputation and social acceptance of purchase, for example through crowdsourcing or campaigning. Everyday greens are able to check the ecological information of a store or product in a service for this purpose, use lending services, order surplus food and invest in environmentally friendly funds. (Sitra & Palmu 2017, 23-25.)

Different analyses of Finnish consumers, as described above, and those carried out elsewhere in the West, point to how the practices of consumers and the commitment to green consumption are affected in everyday life by a number of constraints of quantity, such as time constraints and income levels. For example, the quantity and quality of the information collected by different consumer groups are factors dependent on the use of time. Skill and Gyberg (2010, 1878) reported research results of Swedish consumption,

in which composting, part of recycling activities and own home production were seen as taking too much time. A Finnish study by Paloviita (2010, 1496-1506) revealed that for time reasons people wanted to buy local food in a supermarket as part of their normal grocery shopping, as it was already found more difficult to prepare than prefabricated food. The demands of time are reflected also in the English findings of Gilg's research group (2005, 488-490), in which committed environmentalists most commonly bought local food products and composted kitchen waste. Mainstream environmentalists took the same actions as committed but did not compost. Occasional environmentalists rarely sourced organic food from local shops and a certain group of irresponsible people never did any environmentally actions. In practice, responsibility means directing time and resources towards environmentally friendly activities, and this requires innovation for the means of raising a very high level of motivation. Another option is to make environmentally friendly operations easy, fast and equivalent to normal operations.

In Finland, Puohiniemi (2011, 39) explores ecological attitudes and points to the traditional prudence of older people in the countryside. Only gradually has urban green thinking increased, where environmental friendliness and higher prices can be linked. Saving and consumption are easily seen as opposites, although saving can lead to unnecessary consumption, such as the purchase of low-quality, often easily disposable products.

There has been a great deal of conflicting debate on the different environmental impacts of rural areas and on the other hand dense urban living. A lifecycle analysis by Heinonen and Junnila (2011, 1241) into carbon dioxide emissions revealed that high income levels typically lead to high consumption and carbon footprint more than differences in the type of housing, such as the city, suburb or countryside. This is despite the fact that those with good incomes would have the opportunity to invest in environmentally responsible solutions. High income levels are linked to environmental friendliness in such a way that eco-issues have become trendy and that highly

educated and at the same time high-income people are typically environmentally conscious. For example, the population groups with the most education in Finland are more environmentally friendly than others (Puohiniemi, 2011, 42). The prudence perspective brings low-income people into committed green consumers partly under monetary constrains and partly after moderation became an interesting life form. In an English study of green consumption by Gilg's research group (2005, 491-497), the lowest income level was among non-environmental protectors, the average level was among protectors, and the highest level was evenly distributed between different groups. The products were selected especially from an environmental point of view by committed protectors, when the price was not a significant factor and total consumption was small. The people in the middle-income rage were the highest educated. Particularly non-protectors were without degrees.

In 2011, the age and gender of Finnish green consumption were divided as follows: young people and men were less green, old and women more so. European data has the same share as Finland: the older women are the most and young men are the least environmentally conscious. (Puohiniemi, 2011, 34-35, 42). The results of the English environmental consumption survey also showed that green-bound consumers were, on average, the oldest group and not the youngest of the committed (Gilg et al. 2005, 491). Older age explains the transition readiness towards sustainability even in ecologically oriented groups such as career-oriented in value group reviews (SCORAI 2013, 57). Western public demographic developments towards older societies can therefore actually support the transition towards environmental consumption, even though environmental responsibility has often been emphasized as a lifestyle choice for young consumers.

In environmentally responsible consumption, instead of minimizing environmental impacts, the focus of decision-making may be the search for an identity that is culturally anti-mainstream or fatigue with the rate race. The activities of consumers

classified in the Lifestyles of Health and Sustainability (LOHAS) and Lifestyles of Voluntary Simplicity (LOVOS) lifestyle groups have been analyzed as examples of greenish or green consumption. In 2011, the market for LOHAS consumers, which emphasizes health and sustainability, was 1/3 of the Finnish market and growing in the USA, especially in Asia. Such a trend recognizes that without taking care of nature, man is not well either. LOHAS consumers are also interested in development aid, international crises, poverty eradication, equalization of income, interior decoration, natural products and tourism. They are looking for energy-efficient, less water-using and recyclable equipment and products. They also prefer locally produced products and are critical when it comes to overpacking. Well-being and health matters are important to them, as are self-development and spirituality. (Fine 2011, 22-23). The LOHAS trend represents a wide range of features of sustainable development, of which environmental concern is only one part. The content of this type of growing consumer demand continues to remind developers that consumers are motivated not only by the environmental reassurance, but also by themes such as health and well-being.

Voluntary simplifiers (LOVOS consumers) not only consume less, but also try to find more environmentally friendly and socially sustainable products and services. Instead of living in the suburbs, they live densely in the city or on the countryside, consciously reduce the amount of consumption, choose socially and ecologically healthier, local products and services, engage in green leisure activities, consume less meat and processed food, and prefer natural materials and organic food. They also use product-service systems, repair, exchange and make products themselves, invest in their communities, and want meaningful and interesting work with less work hours. "Non-voluntary" simplifications explain by moderation the necessary simplification and reduction of consumption. They may not choose more sustainable products because environmental concern is not their fundamental motivational factor for simplification. (Marchand et al. 2010, 1433-1435). The latter can even be called Lifestyles

of Forced Sustainability consumers when those living in poor conditions save and recycle everything they can, as the poor in developing countries in particular do. LOVOS consumers represent the ideal of moderation, which requires a radical change in the standards of work, buying and ownership that are typical of consumer societies.

Lifestyles are often driven by people's commitment to different values and Schwartz's (2012) globally applied division of consumers into value groups also explores the relationship to sustainable and environmentally friendly consumption. Values are learned, slowly changing cultural motivational factors and principles that guide life in general. The higher in the hierarchy of 57 values of Schwartz the environmental protection is profiled for a person in surveys, the more they do various environmentally friendly actions in everyday life as activity, such as recycling or avoiding private cars. In Schwartz's theory of values, values either complement each other or are opposed to each other. Young people are renewing and longing for stimulation, while the old ones want conditions to remain stable and appreciate traditions. Creative and curious attitudes to change are typical of the much educated. Low levels of education involve sticking to familiar, safe solutions and wanting to identify with peers. Those with the most education are placed in a field of self-transcendence - universalism and openness to change. Self-transcendence is typically supporting environmental protection, which produces a positive attitude to environmental issues. Self-emphasis and self-transcendence is a value tension based on the primacy of interests. Emphasizing one's own self, the idealization of performance and power is more typical of men than women. For women, more typical is putting the interests of others before their own and manifested in cultural openness, environmental friendliness and caring for the well-being of loved ones. In the 2010 analysis, the main group of young people was placed on the value map with openness to change and self-emphasis in an intermediate area that explains young people's indifferent environmental attitudes. Only with a quarter of Finnish peoples' value world environmental protection played a key role at that point. For this reason, when

promoting environmentally friendly activities, it should be noted that other value areas are also important for achieving environmentally friendly activities. (Puohiniemi 2011, 32-39, 47). In promoting environmental consumption, it is also possible to invoke values that may seem contradictory from the point of view of environmental concern, but they still provide a value-based motivational basis for directing consumer activity.

The core values of consumption include modernists, materialists, traditionalists and humanists. Puohiniemi (2011), who has studied the values of Finnish consumption, combines these fairly permanent values with a different relationship in what is perceived as environmentally friendly or interesting in relation to environmental impact. Humanism, universalism and openness are typical of women with a good education, for whom altruism, comfort and caring for children are important. Traditionalists values are typical with less educated older people, for whom a certain nostalgic idyll is important. Hedonistic consumers are typically status-oriented men, for whom new technology solutions are also important in the environmental relationship. Modern youngsters who want to have fun, on the other hand, even combine the relationship with nature with amusements.

When comparing European countries in the early years of 2000, Finland has a leading position in terms of the value dimension 'conveying nature and the environment', although this dimension is certainly important throughout Europe (Puohiniemi 2011, 41-42). Man-nature relationship and appreciation of nature, the fascination of nature and aesthetic beauty values are reflected in many ways in different areas of life: moving in nature and highlighting its relaxing effect, berry and mushroom picking, and appreciation of landscapes, nature motifs in the arts or, nature elements as part of rituals such as wedding bouquet or christening water. However, the importance of the relationship and the following phenomena are also an object of increasing environmental use and a source of emissions, such as long-distance travel for nature, appreciation of food and related rearing and transport, nature elements

and the use of natural materials in ever-changing architecture and interior decoration, the construction and conversion of gardeners requiring a wide range of resources, the huge increase in the number of pets or resource-eating vacation cottages, the second houses in the countryside.

It is important to remember the differences in nature relations as essential factors that divide consumers. The anthropocentric, human-centric and biocentric, nature-centric views are the opposites of nature relationships. In one, man is a king and can exploit benevolent nature for his own purposes for endless economic growth, while in the other, nature is temporary and sensitive and must be let to live on its terms. The understanding of nature in between assumes that the management and limitations aimed at certainty and predictability will insure the state of necessary balance. (Järvikoski 2009, 91-93). The anthropocentric relationship with nature is environmentally optimistic, as continued economic growth and the maintenance of ever-improving living conditions are possible without causing serious harm to the environment. The problems will be solved by introducing new technological inventions into the production structure of societies. (Kovács 2009, 191,212.) Green consumption practices appear as representations of the biocentric view. Models of a more ecologically sustainable and deep-spirited life seek a role model even through ecological primitiveness, which refers to animism and a part off, near-natural life. (Korteniemi 2009, 180-185.)

In a study by the English Gilg's research group (2005, 494), those who did not commit to green consumption saw humans created to lead beyond nature and believed that there were no limits to growth. The committed considered obedience important and put little value on property and personal influence. They also put nature on an equal footing with humans and believed that nature has critical boundaries that man cannot cross. Despite their cross-disputes, such divide of different experiences of nature also provide a different motivational basis for the development and marketing of environmentally friendly solutions.

GROUP	UNCOMMITTED	RANDOMLY COMMITTED	ASPIRATIONAL AND FRUGAL	COMMITTED
ACTIVITIES	Do not usually do green activities. Indifferent and skeptical about the information offered or if there is any meaning for individuals to do green acts.	Those who try to do something. "Normal" small, one off and concrete ecological activities, such as closing the lights or recycling.	They do real lifestyle changes such as giving up the private car. People searching for ethical and authentic meanings in life and make ecological choices fashionable through these ideas or people who act green for reasons of saving.	People who strive for extremely green consumption. On the edge active, even as fanatics by major consumer groups seen consumers who seek for true reasonableness and low consumption and live in communes and eco villages and do not use things such as oil based products.
THE USE OF TIME	Entertainment, hobbies, work and status-based consumption. Time is used for all the other things than green consumption.	Busy lifestyle, no time or only little to seek out and purchase green products. Easy and functional choices are important.	Despite busy life or through needs for savings there is an interest about the background of products. They try to seek information about those. Use time for purchasing socially acceptable and also trendy ecological products such as organic food or recycled goods.	Want to have thorough information about the background of products and services, purchase only the necessary, things that are for sure ecological, recycle, borrow, mend, compost, and grow their own food.
DEMOGRAFICS	Mostly young and males. More with low education and income level, but also some status consumers with higher income level.	Especially those, who except the norms of the consumer society and are busy family people. If they have average or low-income level, they do not purchase, for saving reasons, ecological products, that are considered to be expensive.	High level of education, both young adults and middle but even seniors living in the countryside. Partly with high income, but also people with low income who consume in an ecological way to save money.	Mostly females and representatives of the older age cohort. Mostly educated. For moderation belongs also the change that the superfluous amounts of work and earning money is changed to part time work in the name of better quality of life.
GROUP AND TREND NAMES	"Business as usual", grey consumers who want to support the continuation of the consumer society as it is and the economic growth.	Grey-green consumers. They mildly follow also the Lifestyles of Health and Sustainability, because the wellbeing of their family is important. Not very big changes in consumption culture.	Aspirational and strong followers of the Lifestyles of Health and Sustainability. Green-grey consumers who combine health, ethical consumption and environmental sustainability. Trend based activities and social acceptability are important, so they do not make radical changes in consumption cultures.	Those who seek the Lifestyles of Voluntary Simplicity, voluntarily a way of life providing them with good and more simple life. Truly green consumers and supporters for "downsizing" and "degrowth".
VALUES	Typical value groups: self-emphasizing hedonists and stimulus seeking enjoyers.	Typical value groups: altruists and traditionalists who take care of those close to them.	Typical value groups: new and trendy seeking eco- status seekers and frugal traditionalists. The values also contain independence and universalist change power.	Typical value groups: universalists who value environmentally friendly behaviours and seek for meaningful life. The general advantages are more important for them that their own good.
NATURE REALTIONSHIP	Antroposentric, human power and rights for exploitation emphasizing relationship to nature. Nature is supposed to adapt without specific protection and technology can overcome any problems.	In the middle nature realtionship, where nature needs protection in some degree, but the laws and regulations take care of it and humans have the right to exploit nature.	Biosentric type of nature relationship, where also individuals need to protect nature, although laws and regulations partly take care of the protection. In agreed amounts humans have the right to use natural resources.	Biosentric nature relationship that focuses on protecting nature's balance. Nature has limited endurance it is sensitive, and it is a precondition to all life. Humans have limited possibilities to use natural resources.

Table 1. It is possible to summarize the previous analyses related to environmental consumption, which distinguish between non-attached, occasionally environmentally engaged, already more broadly willing, also frugal consumers and consumers who are strongly involved in moderation (Kälviäinen 2014).

In dividing consumers into different background and behavioral groups, particular attention should be paid to groups between extremes, indifferent and deeply engaged. In light of various studies, these groups make up the majority, 60-70%, of all consumers. Indifferent people are difficult to influence, but a change in their attitudes and behavior is possible with the change in mainstream activity. The committed no longer need to be converted and their actions are poorly transferred to mainstream action because they are easily considered fanatical and even contrary to socially accepted standards. Among the actors in the middle, there are very different consumers who find their motivation from different values. Family-oriented and accustomed to habits want to implement solutions that are good for their loved ones here and now, whether these solutions are environmentally friendly or not. For reasons of frugality, there are both people who follow the traditional self-sufficiency habits of rural areas, who can also live in the city, and young adults, such as students on a small budget who visit recycling centers. The practices of these frugality groups are partly similar, but the differences in value-basis can be large. Finland also still has a certain group of older people living voluntarily in the countryside, whose main motive is not commitment to the green lifestyle, but traditionalist attitudes. Aspirational educated people, on the other hand, form a very different independent and open group, that wants to be a socially acceptable pioneering group. The development should take into account for which groups solutions are being developed and what kind of way of working or changes, as well as with what kind of stimulus, these groups can be motivated. Of course, the boundaries of the groups are not stable, and, in a positive sense, we can see how consumer preferences and functions are gradually moving in a more environmentally positive direction.

8

Visual stimulus-based interviews on the environmentally responsible consumption of Finns

This section presents the implementation and results of interviews conducted in the Finnish consumer world. These interviews were constructed on the basis of and to make concrete the previous research data on international and Finnish green consumption. These user interviews have aimed to increase qualitative understanding of the importance, behaviors, choices and contexts related to the environmentally emphasized activities or not of Finnish consumers. The study focused especially on what kind of things have attracted or would attract respondents to act greener and what prevents them from it. The research used visual stimulus material and sought to explore intuitive and emotional consumption experiences that are difficult to express only verbally. Examples of such a research approach exist both in marketing communications studies such as Zaltmann 's (1997) visual metaphor method and in design, in materials such as self-reporting based design probes explained by Mattelmäki (2006) containing stimulus material. The visual research approach sought to reach the interviewees' associations, mental images, emotional experience and concrete manifestations of the issues and activities discussed in the interview.

The interviews for 76 respondents based on visual stimulus material were conducted in late 2013 until spring 2014. Most were conducted as personal interviews and a small part also via Skype or by phone. In the latter cases, the participants had received the visual interview material by post before the interview. Of the participants, 38 lived in the Helsinki region and 38 in the Joensuu central region, so that half of the interviewees represented the views of the Helsinki Metropolitan Area and half represented the views of a Finnish rural city dwellers who despite living in a city lived quite close to nature. Of those interviewed, 40 were women and 36 were men. The interviewees were working or students, independent decision-makers living in their own household. Their age ranged between 20 and 68 years. The Interviewer was the author of this publication. (Kälviäinen 2019; Kälviäinen 2015.)

The respondents were searched through the researcher's various networks and

with a snowball technique so that they represented a wide range of professional and vocational fields and levels of education. The fields of work, study or research were represented by the following: engineering and construction, trade, social and health care, natural resources, social sciences, business sciences, humanities and people at the various activities and levels of these professions. In acquiring the participants, the attention was on the fact that they were mostly not deeply committed to green consumption, but rather were between those who were completely unaffiliated and deeply committed, which is the most interesting group for influencing change. (Kälviäinen 2019; Kälviäinen 2015.)

The interview consisted of three parts: filling in the background form, the visual stimulus photo arrangement task and commenting on it, and finally an open discussion. The background form asked about the age, occupation, housing conditions, attitudes to Schwartz's (2012) value-based claims, nature relationship and concrete attitudes and actions related to sustainable consumption.

Quantitative results were calculated from the answers of the background form and, in particular, from the image arrangements. The quantitative results describe the number of reactions, interpretations, attitudes and phenomena highlighted among the interviewees. Of course, they are not a statistically representative sample of Finns' attitudes to images and phenomena of environmental consumption, but they do describe as a versatile sample the perspectives and importance of consumers in different occupations, of different ages and genders in relation to environmentally responsible consumption and related communication. Some of the quantitative results were even very clear among the entire interviewees, for example in terms of the effectiveness and positivity or negativity of image choices. Quantitative calculation of image choices and phenomena also provided information on conflicting phenomena, projections and values in terms of the things the images presented and the environmental proximity.

An important motivational background is the values that consumers consider important. To this end, the form section contained 10 value claims based on Schwartz's theory of fundamental values (Schwartz 2012). The interviewees were asked to choose the value meanings that are important to themselves from the following options:

1. *Freedom of action and thinking, studying new*
2. *Excitement and challenges, experimentation with novelties*
3. *Rewarding self, indulging, pleasure*
4. *Personal success and getting appreciation from others*
5. *An important role that guarantees the possibilities for influence*
6. *Continuity and social peace to secure close people*
7. *Compliance with rules and customs, you do not wish to stand out*
8. *Respect for one's own culture and religion*
9. *The well-being of close people even over your own well-being*
10. *Well-being of all people and nature*

The interviewees chose all meanings of the values, but the following list describes the values according to the selections in order of preference:

Well-being of all people and nature
Freedom of action and thinking, studying new
Continuity and social peace to secure close people
The well-being of close people even over your own well-being
Excitement and challenges, experimentation with novelties
Rewarding self, indulging, pleasure
Compliance with rules and customs, you do not wish to stand out
Respect for one's own culture and religion
An important role that guarantees the possibilities for influence
Personal success and getting appreciation from others

The well-being of all people and nature may have been highlighted in value choices in this study, as respondents can assume that they had to choose such an option in an interview about green consumption. However, the results of the appreciation of nature are already typical in the results of Finnish value studies. The values for the future freedom of choice and the associated excitement and novelties that appeared high on the list of value meanings does challenge ecological consumer solutions, as they suggest that the consumer individually wants to make his own choice, how and what to do.

Social peace can be a complex issue and also a thorny issue of the change in consumption if it and other values referring to the preservation of the old lead to resistance to change. The well-being of close people and the emphasis on safety are interesting routes to motivate ecological behavior. The emphasis on pleasure and the search for excitement, on the other hand, suggest that the consumer is interested in his own indulgence and entertainment, but is not necessarily prepared to make great sacrifices in the name of losing his own comfort. The desire to follow the rules rather

than emphasize one's own importance is interesting because it refers to the obedience of Finns, which, in the name of suitable public sector laws or other public guidance activities, can support change.

The background form also included the choice of three options for the exploitation of nature: one extreme was the continuation of high consumption and the need to protect sensitive nature through technology. The selection of interviewees clearly favors the view of nature and the consumption of its resources as a sensitive issue where nature should be protected. The following claims are here presented in their chosen order of preference:

1 *Nature is sensitive to disturbances and over-exploitation and it is a prerequisite for our lives here on earth and therefore needs to be effectively and diversely protected.*

2 *The balance of nature can be maintained despite the disadvantages of exploitation, as long as societies regulate the activities of businesses and individuals sufficiently.*

3 *Nature is intended for human consumption and with new technological solutions we can prevent the destruction of nature, even though we make extensive use of natural resources.*

The majority therefore considered as a worthwhile perspective that nature is sensitive and worth protecting. Even the many people with technology backgrounds who participated in the interview chose an option other than the belief in technology. The few interviewees who chose the technology solution explained during the interview that the technology must evolve from its current level, because the respondents did

not believe that the current technology could still convincingly solve all environmental challenges. Perhaps this perspective will also provide further insight for those findings by Sitra and Palmu (2017) that some consumers would consider technology to be the biggest solution to environmental challenges. Nineteen in-depth interviews had been conducted in Sitra's and Palmu's research, and the data had otherwise been collected by quantitative survey. In the study results carried out through the selection of researcher submitted, short questionnaire options, it is always also interesting how respondents interpret their general answers in practice.

Despite the mapping of values included in the interviews, the interview material presented in this publication or the analyses made through it did not aim to create such consumer profiles as the consumer groups referring to the sustainable consumption of Finnish consumers in Salonen's research group (2014) or Sitra and Palmu (2017) research. Rather, the aim was to use qualitative research to look at the individual and rich spectrum of factors and situational everyday interests, processes and moments through which consumers could be attracted to modify their lifestyles. These kinds of concrete factors are useful in designing products, services and service systems, as well as in shaping user experiences.

Of course, it would also be possible to continue analyzing the data in the direction of picking up profile groups. Perhaps, however, as an important result in relation to the consumer profiles of sustainable consumption already studied in Finland, this material produced with visual stimulus technique reflects the diversity that exists in the field of consumption and precisely so that many consumers have different characteristics related to the different consumer profile groups studied, through which they can be inspired by sustainable consumption. In some ways, consumption profile groups are an artificial structure, since few consumers are perfect for any group. This study provided information on what kind of issues are of interest or importance to consumers in several profile groups.

The most important part of the interview, the visual stimulus image arrangement and its commentary included 30 postcard-style photographs that presented themes raised by previous studies on green consumption (Kälviäinen 2014). Pictures representing the segmentation of consumers by green marketing expert Ottman (2011,29-32) according to their green interests were also included: resource savers, health enthusiasts, animal lovers and nature lovers.

The themes in the selected 30 pictures included the following phenomena and things:

Pollution and climate change, water consumption and lack of it
Increase in consumption, excess of goods and the number of people
Recycling activities
Impact of consumption around the world
Nostalgic lifestyle solutions, do-it-yourself culture
Voluntary moderation, Lifestyles of Voluntary Simplicity (LOVOS),
Healthy and sustainable lifestyle, Lifestyles of Health and Sustainability (LOHAS)
Technological solutions
Different forms of energy
Treatment of animals and livestock production
Nature relationship, natural beauty, exercise in nature, travel
Environmental activism and normal consumption

Participants were asked to organize the 30 images used in the study in four different groups before the interview discussion: positive and with impressive message, negative and with impressive message, positive and not much affecting, negative and not much affecting. After the organizational task, in the actual interview, each picture was reviewed and the participants explained what came to their mind and why the picture ended up in a particular group. The interviewees commented on the criteria for organizing the images and often also started a broader account of the images related to the picture or the stories of their own lives. Finally, there was also a free discussion in which the interviewees were asked to raise issues and communications that affect them which had not yet been raised in the discussion by the images chosen by the researcher. The image arrangements of the interviewees were documented for the calculation of the average image arrangements and the interview discussions were recorded. The recordings were transcribed as written interview material for the analysis of the material.

According to ethnographic qualitative user research traditions, the starting point was a holistic view of the realities and integration of the everyday context of consumers in relation to green consumption. Efforts were made to look at consumers' experience worlds, habits and experiences from their perspectives. This was accompanied by attention to the way in which the respondents reacted to the images or spoke about and categorized their activities. By first addressing and reviewing the images selected on the basis of a previous consumer research and asking the respondents to group them in four piles, the research setting revealed different, associations, respondent interpretations, contexts and stories related to the respondents' own lives and user experience. According to the user-driven participatory approach, this interview method, which also resembles a workshop, collected participants' perspectives with respectful consideration of issues, negotiation of environmental objectives and even joint brainstorming and learning (Blomberg & Karasti 2013, 87-90). Participatory design tackles user-driven planning from the challenges of real life and by understanding

practice and continues from there to identifying the area of possible solutions through shared learning and imagining (Bratteteig et al. 2013, 120, 128-135).

Image sorting was a method applied based on the experience of visual design research (Kälviäinen-Miller 2004; Kälviäinen-Miller 2005). It sought to identify the emotional reactions, association chains, mental images and maps and perceptions of the factors guiding participants towards environmental action. The basics of visual communication can be used in the research setting to find out the desirability of visual messages, the associations that differentiate them, the atmosphere, and the internal concepts of the mind (Kälviainen 2012). The object of the study was how visual images related and affected to ecological consumption of the participants in the interviews and what content they interpreted in them.

The starting point for using image stimulus as an interview method and structure also relates to the double coding system described by Paivio (2010). Verbal ways of understanding and communicating reach only part of human understanding, and at least systems of sensory perception influences, how people build meanings and experiences. Sensory experience, especially visual understanding, is associated with our mental images and with the meanings and emotions that are bound to them. Our emotional assessments reflect the mental image map formed by the images. (Zaltman 1997, 427-428.) Intuitive-emotional categorization according to users' mental maps can be studied, for example, through the image sorting tasks (Kälviäinen-Miller 2004). The sensory system is based on rapid, intuitive and emotional response, which is important and primary in the real activities of everyday life. The images stimulate respondents to explain their multisensory associations and the chaining of associations that their brain cell routes are accustomed to through the everyday activities (Franzen & Bouwman 2001, 49–63).

The study examined the impact of the selected images, which of them were invoking positive environmental behavior message, and when the recipients would be able to interpret and appreciate the outputs as messages with such a purpose. The

result was an understanding of the influence that the issues presented in the images would have on consumer values and actions as indicative factors. The research also looked at the significance that visual communication and concrete presentation of things could play as a means of influencing. The task of sorting the images of the interview was based on categorization and evaluation in accordance with both the connotations of the images and the image map, in which the things and feelings associated with the images were sorted into important and not so important, as well as positive and negative phenomena. This kind of image arrangement is an associative technique that asks participants to group things into one or different categories. This method is used to determine how participants structure the world. The aim is to get the participants to organize the stimulus information provided to them, which is based on information or understanding of something that researchers have already collected in the past. (Goodman & Kuniafsky 2012, 180-181, 201-202.) In the research presented here, the preliminary data was represented by a collection of images selected using the issues highlighted by the earlier consumption research.

The research topic of environmental consumption involves feelings of guilt and the possible need to explain one's own ways of doing things in a more positive light than they actually are. The purpose of the images was also to prevent the effect of excessive rationalization and defense in the replies. The idea is to bring out emotional, experiential reactions and mental maps before the interviewee has time to think more carefully about positioning the responses to some imagined acceptable pattern of action.
After all, the important thing about this change of direction required for sustainable consumption is precisely to find out how consumers actually see, feel, experience and act in relation to responsible consumption, and how they can then be helped in a situation related to real experience and work. The results of this research method arise not only in the verbal form, but also in the visual form, thus reflecting at the result level the different ways of structuring and experiencing this world (Paivio 2010).

In the research context, the verbal research findings related to environmental consumption, which exist through previous consumer research, were visualized and their semantic nature and cultural context investigated through the concrete pictures chosen as stimulus images. The former verbal research findings as visualizations provided an opportunity to search for reinforcement, conversions and concretizations through the focus in the visual pathway. The illustrations selected for the study provided an opportunity to examine the relevance, content and concrete realities of these findings for the various interviewees: how consumer research at abstract and verbal level was turned into mental images, contextual situations, concrete activities and interpretations for the respondents.

The study investigated what kind of environmentally oriented visual messages were found to be pleasant and appropriate in the consumer's different lifestyle framework and in the visual order of image maps linked to them. The study provided information on what is a credible and desired image for ecological solutions and their communication, and what kind of things and visual translations generate negative implications. The results also showed differences in terms of interpretations of pleasantness and suitability. The respondents' appreciated images help to understand and deliberately build attractive value-based images for the desirability of the communication. Unlike the production of verbal research data, the aim of the research based on visual stimulus and the arrangement of visual material was to explore, in particular, images that concretize value preferences that help to understand the construction and differences of meanings which can then be used to produce concrete functional and stylistic solutions in product development and marketing (Kälviäinen-Miller 2005). The purpose of the study was to use visual research to find out what kind of visual categorizations respondents had, with their mental maps also limiting the impressive environmentally friendly constructs. Visual research was used to find out what pleasant and understandable environmentally friendly messages to consumers could be sent in concrete, visually defined form. (Kälviäinen 2012.)

It is also important to find out whether an impressive message needs always to be positive when it comes to visual impact issues? Efforts are also often made to make environmental protection impacts by presenting negative horror scenarios. The concretization of research findings verified on an abstract and verbal level into visual images is important because the purpose of research data was to provide information for product development and marketing communications. For this reason, it was important to verify what kind of concrete visualizations of environmental proximity are considered pleasant, interesting or effective, and also suitable for your lifestyle.

The metaphorical research method by social psychologist Zaltman (1997) delves into the imagery brought by the interviewee himself so that the interview concretizes the expressions of values, attitudes and product preferences by working with these images. The work with the visual material is based on its features, different senses, metaphors and stories by searching for images related to the interviewee's pleasant choices. In accordance with the metaphorical research idea of Zaltman (1997), common mental models can be assembled by searching for quantitatively often found models. In interviews, visual material stimulates the subject through associations, forms and overcomes obstacles we have with our background and use of verbal language, building the image of understanding through both verbal and other means of understanding and experiencing.

In Zaltman's (1997) metaphorical research method, the interviewees choose the images to be discussed in the interview themselves. Such a method application for visual research is much more laborious for interviewees than working through images taken by a researcher in this study. It is more difficult to involve participants in the study if they need a lot of time and dedication to participate. In this respect, it was justified to choose a research method application in which the images were given to the interviewees ready, especially since the intention was also to find interviewees who did not represent the already most environmentally engaged group.

Taking into account the researcher-driven nature of the methodological application, the study had to make sure to collect also the impressions, mental images structures and actions of the interviewees that did not emerge from the visual stimulation material selected by the researcher. Since the images processed were preselected by the researcher, the interview consisted also a discussion in general terms which issues or visual communication participants found impressive so that they reminded them to consume in sustainable ways. A free discussion of what the interviewees felt was impressive was important, so that the user point of views did not depend only on the images the researcher had chosen. Some of the interviewees said that everything that came to mind or was important to them had come through the images. Some wanted to add themes or refine or deepen some of the themes discussed. There was also discussion about image formats, such as an interest in documentary films or attitudes towards advertising in general or in the case of products advertised as green in particular.

Taste assessments and associative reactions differ due to individual, cultural and professional differences. These evaluations produce the collective selections of choices on which lifestyles are based (Kälviäinen 2002.) The reception and meaning understanding of consumer product communications are based on the previous cultural and social conventions that matter when we interpret, evaluate and acquire new solutions, and in this case well-intentioned, housing and mobility solutions or products and service offerings. Why is a visual message perceived as environmentally friendly? Why is it seen as pleasant and desirable? What negative is perceived to be effective in a direction guiding way? What are the situational boundaries where sustainability issues are of interest and where the impact of other factors exceeds those factors of interpretation or decision? Honkanen (2016, 64-65) explores how schemas in our minds are often hidden. Honkanen suggests their research through interviews, observations, storytelling, or case accounts. Graphic techniques based on spontaneous

production can also reveal maps of internal models. Various network maps, organizational maps, role and task maps also reveal their maker's way of perceiving the world. A visual stimulus and sorting based research presented in this publication is a means to complement this as a rapid method.

Through visual stimulus the interviewees produced a wide range of associations and discussions about environmentally friendly behaviors, their obstacles, lifestyle choices and comparisons with what other people seemed to do. When discussing what might encourage engagement with more environmentally positive choices and activities, the interviewees also described what they are doing now and what prevents them from doing other similarly environmentally positive things. By supporting the rise of unconscious reactions, the research prevented the focus of positive self-image in the data and discussions. However, it is important to note that, as a design research setting, this study did not seek or produce accurate reports for specific development purposes.

Of course, the photo arrangement method had its own challenges in relation to how the participants understood the task or structured it under the influence of their own background. The way everyone was structuring the pictures wasn't quite the same. The interviewees had very different strategies for sorting images, and the instructions were understood in different ways. For example, the word impressive was understood at various levels: when I saw this picture, I would actually do something, or that it had an emotional effect. For this reason, the arrangements contained images related to negative things from the point of view of consumption or destruction of nature, but the respondents did not arrange them in a pile of influential ones. Some of the interviewees said that it was difficult to draw the limit, where to put it, and the differences were small. The same associations and stories were often told about the same picture, although in terms of effectiveness, different interviewees had arranged them in different groups. However, the breakdown reflects the most sentimental first impression from the point of view of one's own perspective, which touched the most, and in that sense the results can be used

to draw conclusions as to what kind of images and issues could have influence. During the commenting phase of the images, the images often gave rise to more advanced reflection than in a quick arrangement, and in some cases the interviewee wanted to change the image to another pile, after looking at it more closely and reflecting.

The images were of great importance for interviews since in most cases the images triggered the discussion out in an efficient and quick way. The pictures also reminded the respondents of things that would not have occurred to the interviewees without them. The impact of the images was positive in terms of compiling the material, as the interview setting forced people to go through the different aspects of green consumption effectively and spontaneously commenting. This was also verified by the fact that a rapid and versatile response to images that cover different perspectives of green consumption revealed correct, practical actions of green consumption, even for interviewees who had replied to the background form that they were doing nothing. For some respondents, green consumption was so heavily focused on some activities, such as recycling, that even the pictures didn't tune them in to discussing much else. A few of the interviewees were scarce with their comments due to busy time issues, which actually reflects a very common practical situation in focusing on environmental responsibility matters in the middle of everyday life.

Filling out the background form and arranging pictures quickly got people to think and discuss issues of sustainable consumption. Rapid introduction is important because it brings out natural image maps and emotional experience better than the opportunity to think and analyze for a longer time. In more detailed reflection, even emotional ways of experiencing are easily rationalized and explained to happen for rational reasons. When commenting quickly on pictures, people often admitted that this is a spontaneous thought or "feeling", as people often called their quick thoughts on the images. The material can be considered useful in the sense that the choices related to the continuous maintenance consumption of everyday life often take place

at a fast pace and are based on "moods" and quick ideas, rather than on thorough consideration or even information-sharing.

Of course, experiencing images is connected to the moment at hand and to what is currently on the surface in your own life or otherwise on the surface. For example, the low snowy winter made the interviewees wonder if it could happen that winter no longer exists? For those who participated in the interview in the heat, the devices attached to the wall of the apartment building were immediately air conditioners and, in a cold moment, they brought to mind air source heat pumps. The respondents' own personal interests included children, if any, and their own hobbies, such as domestic animals. The associations and interesting features of the images were often these personal interests. Many respondents said that nature images in this context were green and impressive, but wondered what would they have been if the theme of the interview had not been known? Would the nature pictures then have seemed just neutral and self-evident? A lot of respondents thought about this.

The beauty or failure of the images or a particular way of describing things in the images also influenced what was interpreted from them. In the negative and impressive images, the cracking ground was considered by some interviewees to be a beautiful and generally very negative image of a black smoke-pushing chimney in the opinion of one was handsome and therefore positive. Solar panels and waste containers were considered to be ugly as products, which for some respondents caused them to be sorted on the negative side. From images of new energy technology, the solar panel was less impressive because it was considered as a visually bleak image. This was, despite the fact, that the wind power aroused more doubt in the discussions as technology and in terms of the cost of setting up. The images could also show some visual phenomenon that made them negative, even if the message had otherwise been positive. When the wings of the wind power plant didn't seem to rotate, someone interpreted it as a negative sign, or when people walk in the woods with their backs facing the photographer, it was negative.

9

Results of image sorting in environmentally responsible consumption interviews

Quantitative results were calculated from the sorting arrangements. The quantitative results describe the number of reactions, interpretations and attitudes generated by the image arrangement among the interviewees. Of course, they are not a statistically representative sample of Finns' attitudes to images of environmental consumption and the phenomena that occur in them, but they do describe the perspective of the ways of communicating, thinking and activities of 76 people in different professions, of different age and genders. Some of the quantitative results were even very clear among the entire interviewees, for example in terms of the effectiveness and positivity or negativity of image choices. Quantitative image selection and phenomenon calculation also provided information on conflicting phenomena, projections and values in terms of images and environmental responsibility issues.

The image arrangements were calculated as an average position on a four field with fields according to the grouping task: negative and impressive, positive and impressive, negative and not affective, positive and not affective. The positive – negative share was clearer than impressive – not impressive in the image arrangement results. No fully unimpressive images were found as in some ways all the images related to green consumption themes and were understandably related to this in the interviewees' choices. However, certain images are selected to be impressive in all groups of participants. With negative and positive or impressive and not impressive the respondents may have given the same explanations, even though the images were sorted into different piles. The stories told about the images were even more similar than the grouping that was made.

Examples of the associations and ideas that the images revealed are discussed here from the positive and effective, as well as negative and effective point of view. Images that have given rise to conflicting ideas are also particularly interesting examples. Part of the 30 images used in the interview are presented as examples in this section of the results.

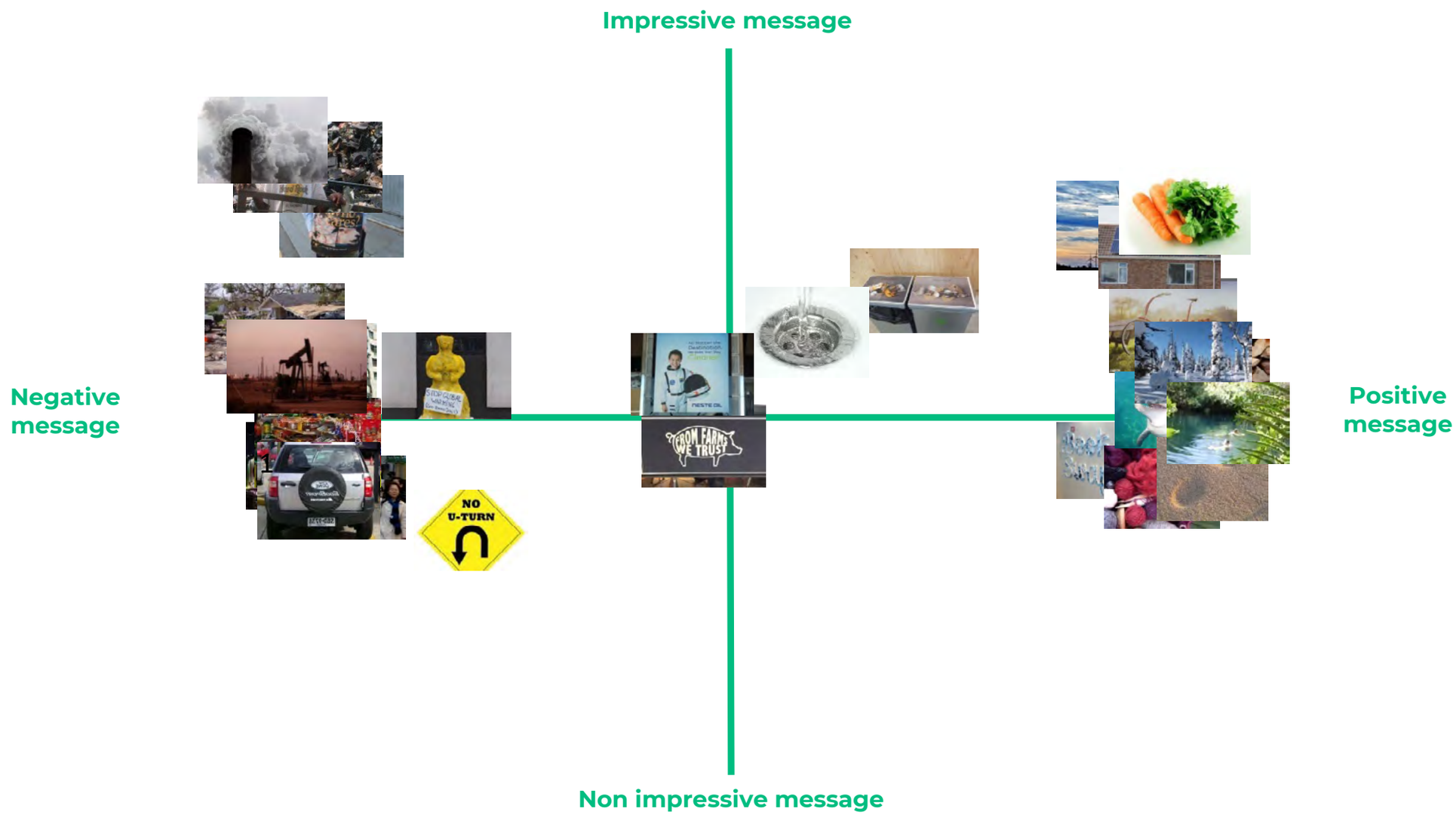


Figure 5. Average results of image sorting (Figure Kälviäinen 2015, 38).

Positive and impressive images

The image of fresh carrots and coriander reminded of unpolluted, Finnish, even self-grown local vegetables that are organic, they taste good and are healthy. Vegetable use was considered better than using meat. Carrots are familiar, an everyday and fresh thing. Few interviewees saw that such extremely clean vegetables are actually not organic because they are processed and especially machine washed.

Figure 2. Pure carrots and corianders (photo Hotblack).

Wind power or, alternatively, solar panels related images also emerged as very positive and impressive images. They were thought to be the best form of energy. They represent renewable, organic, free, nature-free energy that is locally produced, even inclusive. These forms of energy should be used. From the negative perspective they were seen as a little foreign, even ugly, in respondents' own domestic world. The windmills were also thought to be noisy. They were seen to take up a lot of energy and raw materials to produce (aluminum, light metals) and there was doubt as to whether they were really efficient and how long after construction costs, they had to be used before they started producing income financially. Wind power plants in particular caused these doubts. They were still required to be developed and it was dependent on the place whether they were a good solution. When the solar panels and wind power plants were perceived as a little ugly, the interviewees did not say directly that they could be beautiful, but implicitly it was referred to.

Rather impressive and positive images

Bicycling was seen to really bring freedom and it was healthy and emission-free. The image stroke on many as impressive in the sense of freedom the image proclaimed, as a description of the feel in bicycling and with the idea of being able to move freely from one place to another. In this picture it was easy to see the movement happening in the open spring landscape. The interviewees also felt it was good when cycling is positively recommended instead of presenting a negative motoring ban. Those who viewed the image negatively thought it was clichéd and ad-like, but it was still in these cases placed in a positive pile even if not in impressive.

Figure 3. Bicycle declaring freedom (photo Mirja Kälviäinen).

Figure 4. Winter ski landscape from Lapland (photo Mirja Kälviäinen).

Lapland, skiing, and winter were seen as great things. The hope was to have winter also in the future. Domestic tourism should be favored, but the place should be found nearby in order to make travel ecological.

The cottage photo gave rise to thoughts of maintaining the old building constructions and extending the life cycle of the buildings. Old building traditions were perceived as good phenomena. Nostalgic, electricity-free lifestyle, sauna with a wood burning stove, cottage atmosphere, going to the countryside for your leisure time was connected to tranquility, cozy and warm which all touched the interviewees in an emotionally positive way. Also positive was the renewable and self-sufficient wooden energy in the form of logs, which can be gathered together with your loved ones. For

Figure 5. Old beach hut painted with old, red natural color (photo Mirja Kälviäinen).

some, the picture was too clichéd to be impressive and presented Finnish romanticism. Negatively, the summer cottage life was not considered green since people spend a lot of time in private cars in order to get to the summer cottages form the cities. In burning wood, the problem of small particles production was discussed, but it was considered to be a lesser evil than for example nuclear power.

In addition to the picture of the cottage, the image of the pile of wood reminded respondents of wood heating and fireplace, which were generally considered good things. In social terms, the collaborative log making work was also a positive experience for many. Some of the participants did mention the negative discussion about small particles and emissions, but wood heating was considered useful and emissions from burning logs were considered low. Wood heating, in particular, was preferred to heating with nuclear power. The participants also critically asked whether warnings about emissions from small particles is also distorted information that wanted to lure people out of self-service wood use. This referred to the fact that large companies and forestry companies were seen to influence communication in order to gain more profit and power in some of the society's structures. The suspicion aroused by the fact that the obvious and wonderful things are put under suspicion: fire in the fireplace, even candlelight. There were also views on how to take care of the forest by pruning it. At this point, many of the interviewees still had their own experiences and perceptions of close to the nature practices connected with the countryside living and the activities of the natural resources sector.

The positive image material contained a lot of discussions related to nostalgic issues and peace experiences rising from close to the nature experiences. Only the selected images of renewable energy related to technological solutions.

Negative and impressive images

Environmental issues are often communicated, and influence is tried to achieve in the light of destruction and future threats. For this reason, images of phenomena related to

Figure 6. The chimney and a big cloud of smoke from an industrial facility (photo click).

negative communication and presented as a threat in previous research were also part of the photo range. The reactions of the interviewees to this material were interesting because these kinds of campaigns have not always been effective.

The most impressive and negative image of all was, in the opinion of the interviewees, a picture of a strong cloud of smoke pushing out of a black, large chimney. The picture was experienced as showing how an ugly, polluted smoke tumbles into the air and even gets into your lungs. The image seemed to present the idea that the plant does not have cleaning equipment for emissions and reminded many respondents of CO2 emissions and climate change. The image was also interpreted as describing the consequences of production. The industries should pay for the damage they cause,

while low-cost production is not currently affected by environmental issues. Emissions trading, for example, should be made to work. Some were left wondering whether the plant makes heat or useless products. The image was also easily interpreted as being from somewhere else than Finland, such as somewhere in Asia where environmental regulation for the industries would be less severe. Positively the image was also viewed by considering whether smoke is just harmless smoke and water vapor because it is white. In some cases, the picture could also be viewed in such a way that it is positive when people are working, and production is going on.

The image of a black boy in front of a pile of waste set thoughts to think about unnecessary waste from overconsumption and how products have too short a life. All this creates terrible waste. Looking at the picture, it was also considered that the

Figure 7. A man carries an animal welfare poster on the street (photo by Mirja Kälviäinen).

underlying waste is not consumed by the boy in the picture. Excessive electronics waste ends up in developing countries, although waste should be sorted and handled locally. The image created a sense of guilt about inequality, because a black boy in a landfill brings to mind a slum area and represents terrible poverty and a hard life in which waste is collected as a means to survive. Some also note that the boy is wearing a corny Hard Rock cafe shirt, which in some ways symbolizes Western consumer society. Positive reactions for this picture were the feelings of sympathy towards the young boy.

A man carrying a sign of mistreated farm animals aroused disgust and shake. Respondents were sorry for the wretched-looking animals and said that caring about them was important. Many of the interviewees purchasing meat said that they were concern about the of origin and the treatment of animals. For many respondents representing of meat production was perceived as important, too intensive meat agriculture was negative and the demonstrations against it positive. From the picture one person even commented:" I felt like us humas are the wrong animals here on earth, that if someone had to leave here it would be us people". However, there was also a categorization that this was an animal welfare issue and green consumption or meat production was another matter.

For some of the interviewees, however, this type of communication was fanaticism and provoking feelings of guilt. Some of the interviewees also said that animals are treated well on Finnish farms, on the countryside neighbors socially supervise each other and people also need their livelihoods. The last comments were still related to the relationship between many Helsinki residents having roots on the countryside and with its livelihoods.

Rather impressive and negative images

The image of the house affected by the severe storm raised thoughts about how, as a result of the climate change, extreme phenomena and natural disasters (tsunamis,

hurricanes) are increasing. According to the comments from the respondents, the price of consumption is paid. Empathetically, it was also thought that it would suck if you had lost your home. Some people didn't think anything could be done about natural disasters. Some asked why such danger areas have generally been poorly constructed. Few of the interviewees saw here nothing but junk dumped on the backyard, and in these cases they perceived the picture as negative but not impressive.

The image of dry land was, for some, land dehydration associated with climate change, or just a dehydrated land. Some also thought through this kind of a picture about destructive overuse of nature associated with excessive consumption, the spread of water deprivation with further consequences such as conflicts and famine, even large-belly Ethiopian children in the middle of famine. Positively, the picture was also considered beautiful by few respondents.

Figure 8. A house in a residential area after a cyclone (photo msand39).

The image of an oil pumping area reminded how pumping the oil destroys nature, more fossil fuel is pumped to burn and cause emissions, the world lives on an oil hook and natural resources are exhausted. Oil even reminded of its capabilities of causing wars. Because of high oil consumption, some places had to look industrial, mirthless, and dirty. The picture was seen as the archetype of an American oil region or as a rugged landscape of Muurmansk in Russia or the Kola peninsula, where nature has been horribly destroyed by the exploitation culture of us humans. A lot of people wanted to bypass these questions because they thought there was nothing you could do about it alone.

A picture presenting a wall of a large apartment building with lots of air conditioners associated with a poor residential area. It was perceived as dilapidated, and that this kind of environment does not attract residents to green consumption. The picture also brought to mind the growth of the population and the packing of people in cities. The picture was also analyzed with a technology use lens in such a way that it was poorly organized when everyone has their own air conditioning. It would have been more intelligent to have a combined overall solution and energy would have been saved. However, air conditioning devices were needed when climate change raises temperatures. In front of the pictures, people were also considering their own solutions and suggestions for problem areas.

These reactions to scary images follow a reflection by Honkanen (2016, 99) on how scary messages can also remain too general in terms of influencing: they do not contain concrete instructions on how to change one's own attitudes and activities in practice. This can be seen in the themes of the destruction of nature. Climate change is abstract and far removed from everyday life. Scary images of the damage of nature do not combine with everyday life and learning to diminish high impact consumption. Reactions can be that you can't do anything, and you can avoid the consequences when they are somewhere far away.

Strong intimidation also provokes psychological control mechanisms. Honkanen (2016,

100) analyses that there are two different ways to respond to a fear-inducing issue: to control a threatening dangerous situation or to control the fear itself. Control is a constructive survival strategy. Controlling fear focuses on fear and causes rejection, denial, avoidance or panic. The risk prevention strategy should be tuned on, but the individual should also be able to see some of the effective means available to respond to the danger and have the ability to exploit these means. The means and guidelines should also be concrete and detailed so that they can be tackled in practice. So, the intimidation should also be followed by ways of influencing the danger and what the individuals can do themselves. At present, the guidelines for sustainable consumption are not detailed and context-specific enough and things are perceived to be difficult or costly. Often the reaction is that there is nothing a small, individual person can do.

Conflicting images

The discrepancy is reflected in quantitative image sorting results so that in grouping an image, it was selected for a wide range of groups: both positive and negative, or also impressive and not effective. In the four fields picture from the results, conflicting images are located on the middle area.

Conflicting but positive images

It came out that sorting and recycling are good things and that doing so brought respondents satisfaction about their own sustainability activities and when they were not sorting produced guilt. The production of waste as such was found to be a negative issue and gave rise to a wide range of images of waste mountains, landfills, disadvantages of electronic waste and plastic waste in the seas. The interviewees also analyzed and reflected the difficulties of recycling. In this picture part of the respondents saw clear examples of what needs to be put where and where they end up. Negatively and more closely perceived, these containers were seen as ugly, bleak and unpleasant. Such waste as biowaste was seen here as something that ends up to

Figure 9. Waste containers where there are photographs of the waste to be sorted into them (photo Mirja Kälviäinen).

Figure 10. Book exchange point at Helsinki Airport (photo Mirja Kälviäinen).

landfill. The respondents thought that waste management should be arranged well, and they even expressed sorting as a skill where you can always learn better. Such doubtful comments were also expressed whether sorted waste would actually be used for further purposes at the end of the game.

The image of water dripping down the drain gave rise to thoughts about how it is important to have clean water. Clean water was also seen as too obvious to us when there is already a severe shortage of clean water in many parts of the world. Excessive water consumption was seen to devour nature. The use of water should be considered, guided and reduced. Water consumption meters were deemed necessary. It was found negative that clean water in the picture was poured unnecessarily into the sewer. The interviewees confessed to doing this either themselves or it was done by others in the family, such as the respondents' own children.

Book exchange point picture Helsinki Airport led many of the interviewees to say that this was a good thing. The phenomenon was referring to soft lifestyles. The flea markets were a good thing and people used them. They also seemed to encourage a sense of community. However, for many of the interviewees, it was unclear what the issue was in this picture. The place was seen as a beauty salon, spa or luxury place, all of which refer to commercial, excessive consumption and not recycling. The visual appearance of the place did not signal a sharing economy and a sustainable lifestyle. When the subject of the image was clarified, many wanted to change the image from not impressive to positive and impressive. Another explanation for why the book swap place was difficult to understand is that such action was not yet mainstream at the time of the interview and therefore difficult to perceive.

Conflicting and negative images

The image of a snowman with a global warming cessation sign was a reminder that 'Stop global warming' is an important issue. It reminded that there was no desire to pay

the price of consumption. Some of the interviewees felt that it was good to be active, awake and demonstrate. However, the picture and the subject matter were generally perceived as unpleasant, ugly, confusing, too multilevel and difficult to understand (what material was the snowman, what the picture presented, what it meant). The way to communicate with this street character was also considered too fanatic. It was barking at others, which can even work in a different direction than intended. Positively, the character and communication were perceived as humorous and tongue-in-cheek a way to remind people of the importance of preventing climate change.

Neste's ad raised the suspicion that a big oil company can't be green, not even if it tries to do something. As a worst scenario it was perceived in a way where only the surface was polished. Even those who considered the picture positive doubted

Figure 11. A sign proclaiming the cessation of the climate change in front of a yellow snowman (photo Mirja Kälviäinen).

Figure 12. Neste Oil's advertisement at Helsinki Airport (photo Mirja Kälviäinen).

whether the message was true and whether Neste would do things to the end. It was considered positive that the oil company was seeking to develop its operations and offerings. The picture of a child was considered positive because it put the aims of activities for the future. However, it was considered bad that a big company uses a child in advertising. The use of palm oil was connected into Neste's business and it was not considered to be worth supporting. The question was how to use waste food oil, for example. The content of the image sparked associations with rally driving and private cars (some thought driving was bad and some said they needed the car) and their petrol consumption. Only a few saw space travel and an astronaut in the photo - which was the original purpose of this Neste advertising content.

The "From farms we trust" sign made respondents consider how it is great if you can buy meat from reliable farmers who pay attention to animal welfare. This was associated with the idea that organic meat can also have a better taste. For others, however, the sign reminded of intensive meat production and produced advertising skepticism. Even organic meat production was not considered good, because an ecological person does not eat the meat. Considerations were also given as to how intensive production can be even more ecological than organic production. The text was even considered humorous in a sarcastic way because of doubts about the ad style of an American big company.

Variation of impressions in different participant groups

It was also interesting to open up, through four-field, examples of how different genders, those living in different regions and interviewees of different ages reacted to the images and grouped them together.

Figure 13. A pig sign marketing the reliability of meat production (photo Mirja Kälviäinen).

The difference between women and men draws attention to how cottage and wood pile images are among the very impressive and positive images for men in comparison to less so with women. The female respondents ranked these images clearly among the least impressive positive images.

An interesting difference can be found in several different image sorting results. The winter landscape was considered positive among the respondents in the Helsinki region, but not very impressive. In the Joensuu region, on the other hand, it became the most impressive image. The image of the Book swap book exchange point moved among the respondents of the Joensuu region in a direction that was more negative and less impressive than the respondents in the Helsinki region. This was also accompanied by not understanding of the content of the image. The Eco sport-marked car remained among the negative images in both areas, but in the Helsinki region it was more impressive than in the Joensuu region.

In the differences between the image placements of younger and older interviewees, attention is drawn to the image of fresh carrots, which was considered positive, but older interviewees felt that it was much more often impressive than younger ones. Another noteworthy difference in placement was the location of the Neste Olin ad. With younger respondents it became quite impressive and positive, but for older respondents who clearly took a more critical and skeptical view of ads, the picture landed on the side of negative and not so impressive.

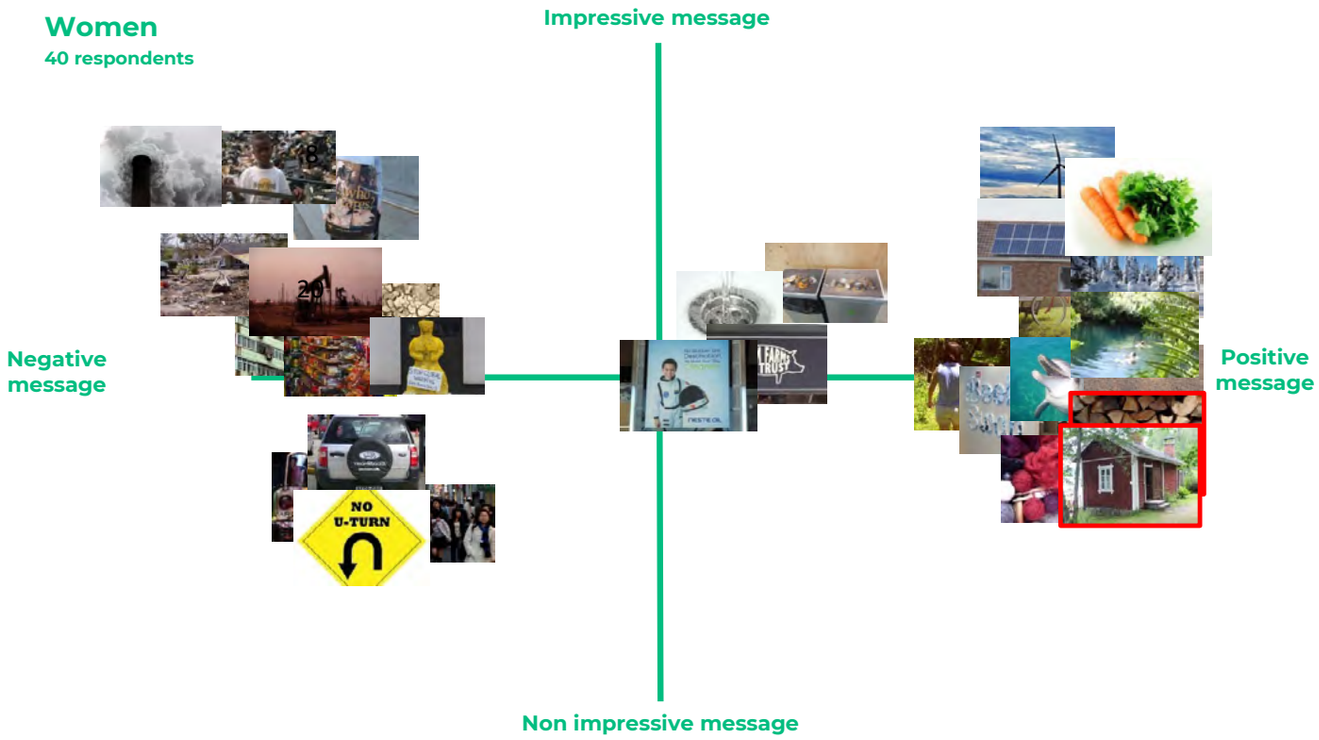


Figure 6. Women out of 76 respondents placed the images in this way on average (Figure Kälviäinen).

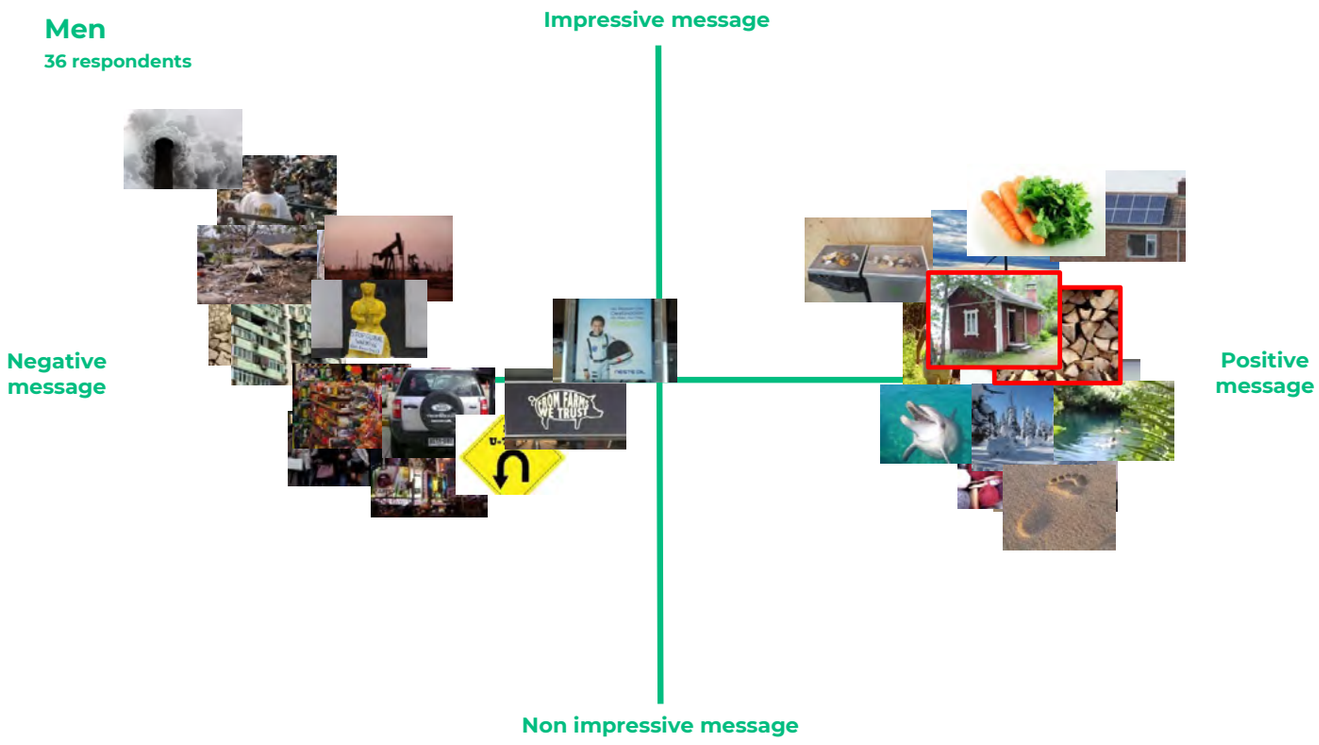


Figure 7. Men out of 76 respondents placed the images in this way on average (figure Kälviäinen).

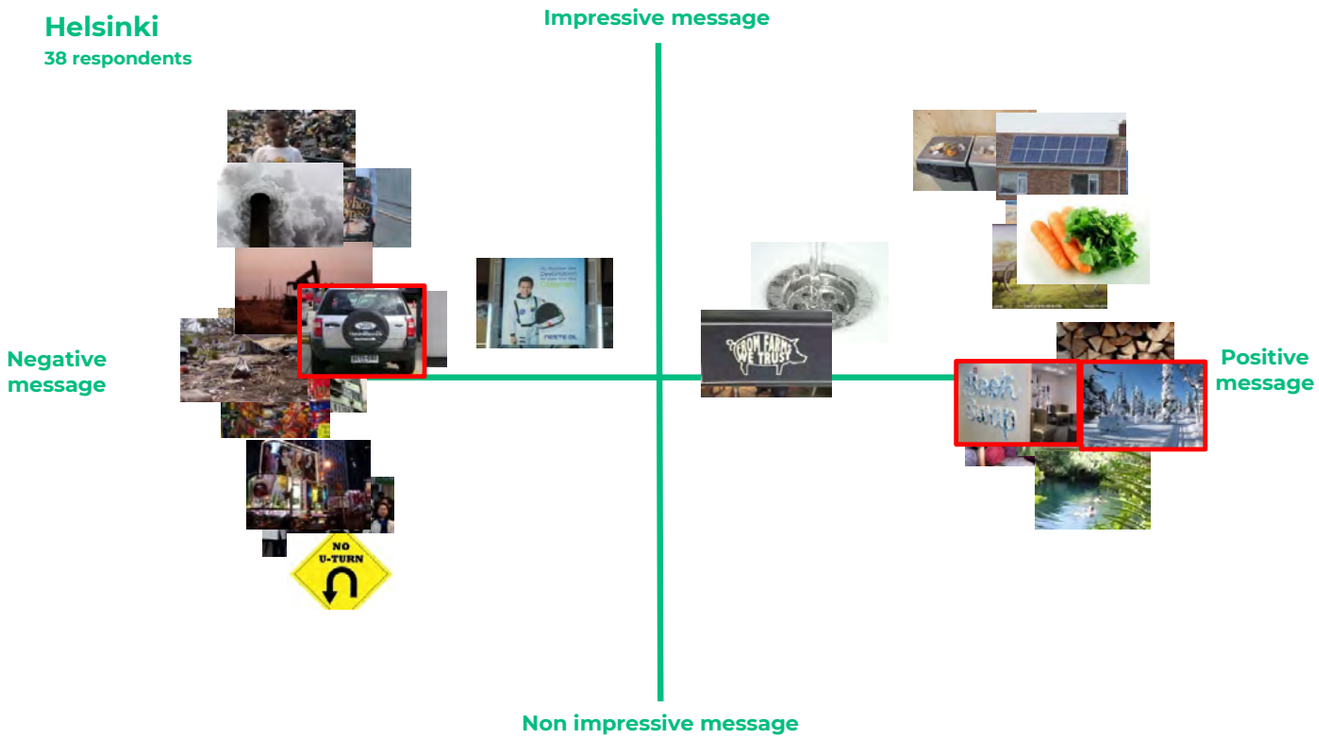


Figure 8. The capital area Helsinki respondents equaled 38 of the total of 76 respondents, and they ranked the images this way on average (figure Kälviäinen).

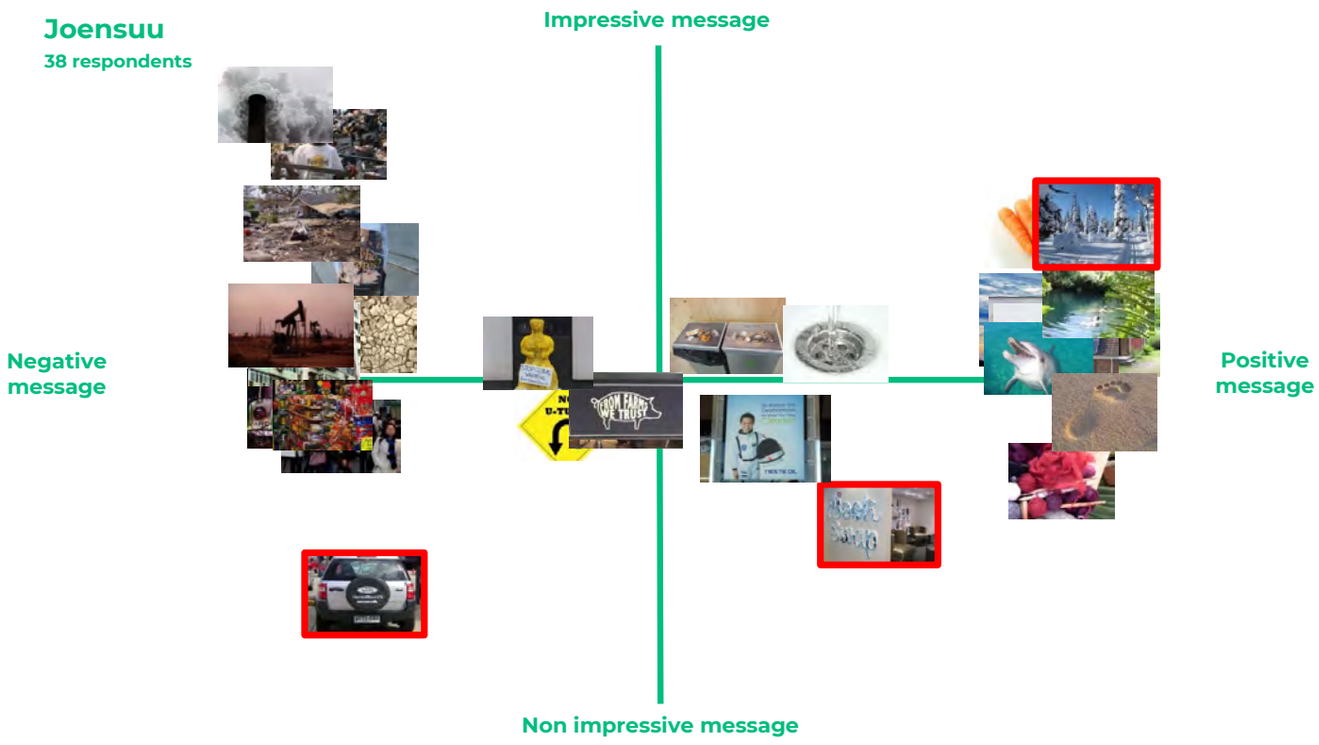


Figure 9. There were 38 out of 76 respondents from the Joensuu region and they placed the images in this way on average (Figure Kälviäinen).

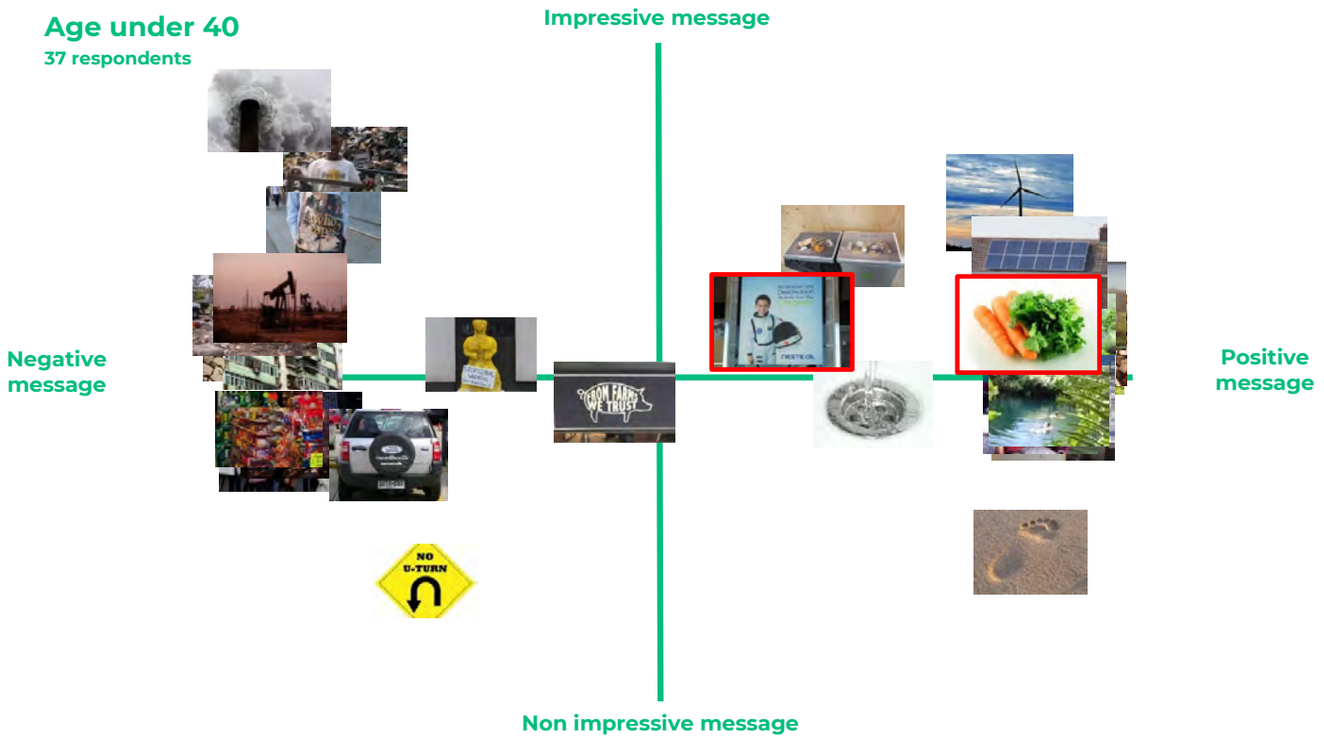


Figure 10. There were 37 out of 76 respondents aged under 40 and they placed the images in this way on average (Figure Kälviäinen).

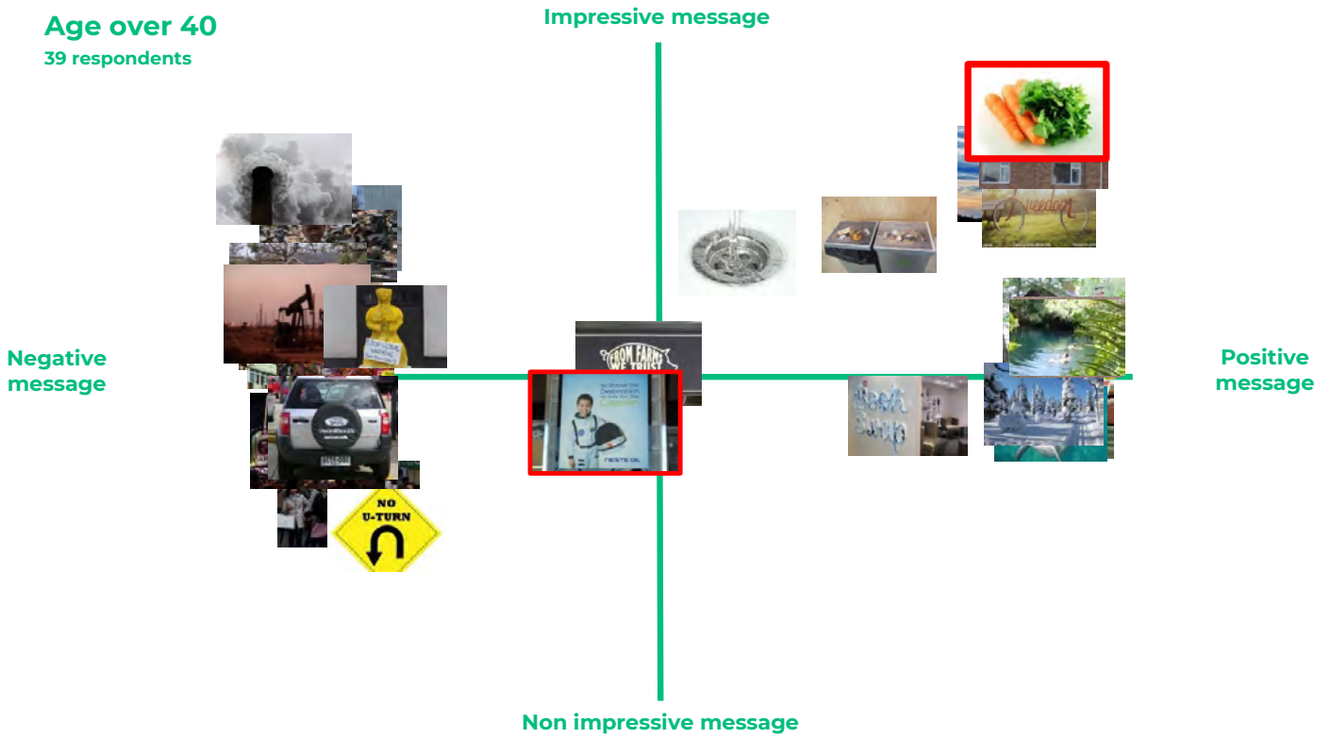


Figure 11. There were 39 out of 76 respondents aged over 40 and they placed the images in this way on average (Figure Kälviäinen).

10

Qualitative analysis of interview data on environmentally responsible consumption

The qualitative analysis was carried out as a content analysis, which examined the themes emerging from the data. It was also possible to combine the themes with the calculated image maps that had been created through the respondents' image sorting results and were representing the quantitative results of the image sorting task. The analysis also applied narrative approach in that it also looked at the narrative structures contained in the interviewees' associations, interests and stories of everyday life and the possibilities or obstacles in them around sustainable consumption.

The purpose of the analysis was to provide answers to the research task of how environmentally responsible solutions should be designed, that they could be found, provided solutions for people’s needs and were attractive to consumers. In this respect, the task of the analysis was to distinguish essential and interesting issues from the point of view of developing solutions. Not everything that has been raised through this analysis directly suitable for designing or for guidelines, but some issues still require a development assessment of what the facts and reports that emerge from the interview material mean from the perspective of development. A concrete example of this is the obstacles or other interests that distract from responsible consumption choices and activities. After all, the successful design solutions should be able to respond in such a way that they overcome these obstacles and are able to take advantage of consumer interests and issues that are relevant to consumers.

The transcribed interview material has been analyzed from many different perspectives to map a rich understanding of what prevents and could support environmentally responsible consumption. This includes how consumers could take an interest in environmentally responsible solutions and activities, as well as how to remove barriers of finding, selecting and using them. Since the data also contained the views and suggestions of 76 different respondents on what could increase and make green consumption easy, this interview study is also a kind of crowdsourcing project on the possibilities of switching to environmentally responsible consumption. The

solutions included in the interview material were related to interests, communications, activities, products, services, sociality, infrastructure and public sector regulations. In the interview material, it is possible to find both content and meaning themes, concrete issues related to obstacles and structures of stories. As the number of interviews increased, clear saturation began to take place both in themes, objects of interest and obstacles. The differences in the practical operating situations in the capital Helsinki region and in the more rural Joensuu region and the similarities of many consumption experiences also emerged.

The analysis has considered the definition of green, environmentally responsible consumption from the interviewees' reports and reactions to the presented stimulus pictures. This is reflected in how green and environmentally responsible consumption was interpreted as images and activities. The obstacles are represented both by broader experiences of doubt in relation to environmental responsibility and by obstacles to practical action and the associated experience in the descriptions of the everyday life of the interviewees. Finally, the analysis focuses on summarizing useful interests for protecting the environment in support of creating advice for design: what kind of everyday themes people were interested in discussing and storytelling about their own lives. An important discussion theme is also the communication and understanding of information and brand identity, enabling practical choices and activities, and the meanings of social interaction. Finally, the proposals given by the interviewees on appropriate communication methods and procedures have been put together.

Definition of environmentally responsible consumption and limits of solutions

It was possible to analyze the respondents' perceptions of the environmental impact of everyday consumption through the sorting task, the associations aroused by the images and the material produced by the open final discussions. What was interesting about the entire interview material was how environmentally responsible, green

consumption was understood in many different ways. The interviewees defined green consumption as recycling, saving resources (water or energy) or taking care of the treatment of animals. Different interests defined the targeting of people's activities. Green consumption was therefore linked not only to actual environmental issues, but also to other issues such as the producers' working conditions or the treatment of animals. For some, the perception of total consumption concerned only the purchase of goods and services and not, for example, housing, which actually has the greatest environmental impact. As a whole, the answers reflected a very flimsy understanding of what is relevant or harmful to the environment in terms of everyday consumption. The perceptions and actions of consumption were easily focused on small, concrete things. The talk about extensive, comprehensive production and consumption systems with resources, emissions, pollution and waste was rare in the collected data.

However, in the light of this material, nature was considered important and vulnerable both in the selections of the background form and in the discussions of the interview. According to the interviewees, it was especially necessary to take care of it. Nature was described as wonderful, beautiful, refreshing and vulnerable. It was also a source of freedom. A nature experience was considered a positive reminder of the importance of nature and of the revitalizing importance of nature to man. Some of the interviewees also made critical comments on how going far distances to the cottage and travelling to Lapland is not green, but only travelling around in the areas nearby you.

Storms and natural disasters in the pictures showed that nature could disappear. Similarly, beautiful pictures serve as a reminder of, for example, the beauty of winter, which is not necessarily going to be available in the future, a conclusion made when the last winters of the interview period had not been proper. Such weather conditions were a concrete reminder that winter and the joys or exercise opportunities of enjoying the beautiful winter nature can be completely lost. The interviewees also considered that when there is a lot of something, it is also easy to get numb to it and take it for

granted. Natural beauty was available and so taken for granted in Finland. However, a debate on the loss of biodiversity, for example, representing deeper knowledge, was not started. Many people found nature photographs impressive in connection with this interview and topic, but some commented that they would not necessarily affect thoughts of environmentally friendly activities if they were shown in another context.

The interviewees had different ways of thinking about the effects of their own consumption; worryingly many people stated, "There is nothing a small person can do" or "It has no effect" type of comments. Some people said straight out that they don't think about things like this in everyday life. However, themes related to environmentally responsible consumption solutions also emerged from their comments, such as thinking about health issues, which included vegetarian food and cycling or walking. Some of the interviewees said that they knew that more should be done, but because of laziness or other urgent demands, it was not done. Some even said that when there are so many people on earth, it is important that everyone thinks about their own consumption. The interviewees' explanations for trying to do something and why not doing more reflect the guilt and sense of incompetence in relation to these issues. As justification for the fact that the environmental aspect was taken into account only slightly in everyday consumption, some interviewees also considered the impact through work to be greater than by changing the individual way in which you otherwise consume in everyday life. Concrete examples related to the work were the design of a new carpooling application by an IT professional, influencing chemical industry processes or building long-lasting interior design solutions in service environments.

Some of the interviewees also presupposed that there were some correct answers in the issues of environmentally responsible consumption discussed. One interviewee even said, 'I hope I can answer correctly'. The interviewees also often said that they knew that something should be done in a certain way, but that they do not do so themselves for some justified reason. People therefore had the idea that socially

acceptable opinions and some of the right policies exist in relation to environmentally responsible consumption. On the other hand, respondents had a lot of feelings they called themselves "feel-based" about what is ecological. They admitted, in part, that they are not based on specific information or research results. Few people related green consumption especially to energy consumption. For example, down-to-earth, nostalgic life and local production were often perceived as self-evidently green. The interviewees' self-motivated explanations of environmental responsibility or green consumption also included the following: self-sufficiency, a healthy diet, recycling or heating with wood. Some of the green ideas were specifically directed at animal welfare, when it was said: 'on holiday trips I do not pollute the environment, I certainly do not ride camels or elephants or go to tiger temples'. There was no comment on such a perspective that, in fact, a flight to a tiger temple country had been a matter that has caused a lot of environmental impact. Men, in particular, used the word feel while projecting their views. Despite such an emotional way of experiencing, there was a need for more easily understandable and accessible information, so that it was not without self-criticism-to be so vague.

The city and its crowds of people were often seen as polluting, such as an apartment building full of air conditioners or an Asian-filled city or a powerful set of advertising lights, and correspondingly reversely the countryside as a nostalgic eco-village. This perception was common, contrary to existing research data on the higher consumption of scattered housing in relation to intensive housing areas. The Asian city site with crowds of people was perceived as cramped, dirty and polluted. This kind of city experienced as ugly and mirthless, was not seen as encouraging green consumption and caring about its surroundings. Small village areas like Nurmijärvi were seen as cleaner than the city. A nostalgic life form close to nature and, for example, a summer cottage life is easily perceived as "clean and green", even if it involves shaping the natural lake shore and possibly driving hundreds of miles with a private car.

It also varied whether the effects of concrete own action were seen or only own abstract perceptions of things. The interviewee may have replied to the background form "I avoid travelling by flight", although he said he had just been in Thailand on holiday. However, the same interviewee said that he or she was already converted and that he was trying to act in an environmentally friendly way, for example in his or her mobility. Most likely, he avoided air travel in everyday life and found the rare holiday irrelevant. Similarly, one interviewee replied that he was trying to do his part, for example by recycling. However, they had a new big house and he announced that he couldn't get along without a car. His idea of environmental friendliness was targeted at recycling. One's own view of one's own activities may be intertwined with one's own perception of what can and should be done, and not, for example, with the knowledge provided by public sector research actors about how to actually live and consume responsibly in everyday life avoiding the environmental impacts.

There are different related everyday activities, which perhaps also tell us that things were followed with "half an ear", as one of the respondents said he would do. The expressions used included 'climate pollution' or 'windmill'. A lot of people thought wood heating was good. However, someone also said that if everyone used wood heating, it would no longer be ecological. This had to do with following more some research-based discussions and even casting doubt on one's own perceptions. Of course, some of the participants had some expertise in their work and even discussed issues such as the 'carbon sink'.

Perceptions and discussions about what is polluting or what is green were often accompanied by the visual appearance of certain things. Pollution is ugly, like black smoke and dirt or like a mirthless oil pumping area. Green, on the other hand, is something pure, pointing to expressions as Cleantech. Such a perception of green purity was easily embedded in discussions, when in fact excessive purity may be bad and is due to the fact that too many chemicals have been used or production has been

done using intensive methods. Organic food, for example, is thought to be particularly pure in an image. The white-based image of clean carrots appealed to most as pure, healthy organic or local food. Only some of those particularly interested in cooking took up the fact that the carrots in the photo were probably not organic because they are "too" clean. They were negative about washed carrots – "those who look dirtier are local food and organic, these are intensive production because they have been machine-washed too clean".

Multisensory, feel-based and emotional experiences emerged from the interviewees' comments: "naturalness," "peace," "nostalgia," "slow life," "a nice smell of fresh wood," "a green vibe from a fireplace fire," or referring to some green vibe, even if it's not so green. Who cares animal demonstration image aroused emotions: “It is so negative that I wouldn't want to be a person who would carry that sign, for example, around my neck”. However, the mistreatment of the animals hurts. The smoke from a chimney caused experiences of vomiting when the smoke scares, distresses and makes you shiver. However, emotions can also be positive. A respondent, for example, said "If I see apartments like this somewhere, then a smile will come to my lips". Nature and nostalgic lifestyles, such as at the cottage, give people a sense of peace. Negative emotional experiences were also described. It frightened what will happen in the world as the population increases. A lot of people discussed how you're going to sleep, when the storms are going to increase. The mass of people was distressing, and a respondent stated that he wouldn't want to be in that kind of crowded place. The city photos gave rise to fantasies about how much that kind of a shopping paradise, as a result of the high consumption, pollutes.

A person who wants to feel good doesn't smell bad or look dirty. Cleanliness is the image you want, although on the other hand there is no knowledge of what chemicals or processes have been used to create this so-called purity. If there are documents or other media communications about a product group, such as food or clothing, people

will pay attention to it and start watching the production chains. However, for many other product groups, no questions or criticisms will be made. In this way, recycled products are also placed under the norm of transparency in the manufacturing chain and monitored with a western purity criteria. They are set under same expectations as new industrial products. One interviewee wondered, among other things, how Pirka's recycled paper handkerchiefs smelled bad. She had discussed with friends that some children had collected the recycled fibers used in them from landfills. Another comment related to the smell was the exclusion of biowaste collection from the one family house due to smell drawback. The emotional demand for cleanliness also brings the impact of a multisensory experience field to responsible consumption.

In free discussions, people did not attach climate change and other major environmental challenges to consumption, but in the case of images, the climate change debate emerged. A few explained how they had begun to believe in climate change. Al Gore's climate change documentary at the Finnish school had been perceived as impactful, so that a few young adults still remembered it after many years. The storms brought climate change to many minds, as did the chimney of the factory and the dried-up land. After the hurricane, the question was whether it and climate change are driven by human consumption or whether the storm is just a natural phenomenon. However, storms as a frightening and uncontrolled forces of nature brought to mind the man inflicted climate change. The cloud of smoke raised the question of what it was born for. Is it energy production or products? What do they do in the factory and if I am a downstream user of these products? Is this smoke pollution or just some harmless gray gas? Although the image of the smoke that looked dirty was perceived as very negative and impressive, someone was also wondering whether it was actually about well-being when the wheels of the factory were spinning. Dry land highlighted reports of water shortages in regions of the planet affected by drought due to climate change.

One theme that emerged in the discussions of the images was the effects of excessive consumption and human greed, so that people were exploiting the nature until it was destroyed. Large corporations were seen to be doing their damage in developing countries. The production and use of oil “raped the earth”. Oil was strongly associated with motoring. This despite the fact that it is needed for so many other things and products. The use of oil and the destruction of nature in the name of acquiring and using it was considered to be such a big deal that it couldn’t be affected. "Oil is something you can't help on your own. You just want to pass the issue."

Abundance and excessive consumption

Consumption and advertising are perceived to be associated with people being pushed over to everything unhealthy and, in particular, too much. The full supermarket's candy department as an image represented vain, unhealthy and lavish consumer hysteria. In addition to unnecessary consumption, unnecessary packaging and the resulting unnecessary waste sticked out: "Packed all separately and many times, how much waste is generated? " or "Western unbridled waste production" as comments were related to the unnecessary production of waste. In addition, buy and throw away products reminded people of green consumption: it gave concrete example of the stupidity of consumer culture. Over-consumption also caused too much waste. For many people, the too luxurious and kitsch cars were an example of excessive consumption and needs. American and American large companies as producers were also a popular reference to over-consumption by the interviewees. "Overproduction must be produced so that we are satisfied that we have the goods that we desperately need, we are so indifferent." Excess is negative, and an enlightened person can show with how little he gets along well. Large quantities of delicacies in the supermarket or the individual air conditioners of a dirty and worn apartment building reminded of how, even with a small amount of money and even in poor conditions, you can buy a lot of

material. With a lot to spend available and at a low price, the results were seen - that consumption is increasing, and the amount of waste is getting out of hand.

Associations and chained stories that emerged through images can be used to view the image maps and systems in which the interviewees' thoughts revolve around. What is interesting is how people saw or did not see different things interconnected. “Packing people into cities is not a green thing, it is an economic issue”. An African boy in front of a pile of waste may have aroused thoughts about global consumption and waste chains: "The African boy has not consumed the entire waste pile – it was born of Western consumption" or for others it could only have been a local pile of waste and a slum. Separate images in the image set also brought to mind other images from around the world, such as waste mountains, plastic pollution in the sea or dead birds. Themes in this context also included exporting electronic waste to Africa to pollute nature and handling it in poor conditions. Many respondents started to think about how people buy too much, without thinking about what happens to packaging and products when cheap and bad products are quickly rejected.

On the basis of the background forms, it was noted that only three interviewees marked technology as a solution provider to the environmental challenges. Even those who expressed their belief in the saving power of technology said that it still needed to be developed and an open mind is required in its introduction. It was hoped that technology would become both economical and efficient. Most of the interviewees with an engineering background also replied that nature is sensitive and that technological advances are not saving it. However, the attractiveness of innovation involved being technology-friendly and seeing the need for new experiments.

Respondents thought that the big players had started to do something, but that was not enough. Companies were perceived to have the resources to make new decisions, but the building of their image was seen as too polished. Doubts were expressed as to how secure or effective the new solutions are, and as examples

wind power and solar energy were seen as partly gone wrong. In particular, there was conflicting information about wind power, and a few people with engineering backgrounds in particular expressed the view that the construction of wind power is more consuming than the production they achieve. Technology was seen as just one solution direction. It had to be used in such a way that it really made more efficient use of natural resources. Technological developments were also linked to the need for a nostalgic lifestyle in some people's minds, in other words, the use of technology and the eco-village are not contradictory scenarios, but also complementary ones.

Obstacles to environmentally responsible operations experienced in everyday life

Environmentally responsible consumption and related activities clearly involved extensive barriers to knowledge, a doubt if there is enough competence and know how. In addition, there were obstacles of learnt habits and desire for comfort, with a sense of guilt, and also obstacles to practical choices and activities. Social standards were also clear obstacles, but at the same time they were clearly an opportunity for positive encouragement. The similar typical obstacles to competence, ability, established thinking patterns, feelings of guilt and fear, social habits and everyday habits can be found in the analyses what prevents behavioral change in general in the psychology of influencing (Honkanen 2016). Fortunately, these same obstacles also include opportunities to influence and change behaviors.

Knowledge-related barriers included awareness-related ones and ones due to the difficulty of accessing information. In normal everyday life, it was not considered possible to react to environmental challenges or information regarding them. The self-evident things just passed by. Numbing was a typical condition even for negative environmental news. The information received or provided by public media, produced fragments of contra dictionary information and it was difficult to find covering information even if you would try to find it. Both numbness and the contradictory

nature of knowledge are described by this explanation: "I don't really know what I think about climate change as it doesn't affect me in any way, because I read about climate change, you don't have it or it is, and I don't know who's right, so I don't care about it either". A typical comment was: " this world is such that you don't know what to believe in". A lot of thought was given to what would make sense when conflicting information comes in. There were doubts both about yourself in relation to what information to seek and find and, on the other hand, about companies, what information they provide. As an example, it was mentioned that information on products is not readily available, for example in terms of water or energy consumption that has gone into manufacturing them. It is difficult to get information about the complex chains of manufacturing. One should also know how to recycle. The interviewees were worried what they might do in their ignorance, such as participating in the use of meat, which has been the result of a production process that mistreats animals. In the respondents' speech, the mistreatment of animals was categorized very strongly as an ecological consumption issue and production animals as part of nature.

Conflicting media messages lead to a situation where people had learnt to doubt. This was particularly evident in the viewing of images and the ideas attached to them. At the image of grey smoke from the chimney of the factory, one was left wondering whether there was harmless water vapor, carbon dioxide or some other pollution in the picture. A picture of an apartment building where each apartment had its own air conditioner also raised the idea that maybe they were air source heat pumps. Not everyone was sure whether climate change and the storms it caused were man-made. However, older respondents in particular said that they had gradually shifted to believing more and more that nature should also be protected by their own actions.

Such fragmented, contradictory and strangely focused access to information and the resulting perceptions do not produce a holistic and credible picture for consumers of the effects of consumption or change in behavior associated with it. The theme

of sharing communication and information and their effectiveness is discussed in a separate chapter more deeply because it emerged as such a big challenge in the materials and analysis of this interview.

The lack of knowledge and conflicting communication produced also a clear capability gap and the associated lack of self-confidence that seemed to bother the respondents. This was accompanied by the fact that the environmentally responsible activities carried out by the interviewees were very fragmented and related to small concrete issues. Since the interviewees had a hunch that the matter was complicated and difficult, they also did not have the confidence to go out and sort it out for themselves. Some of the interviewees in the interview situation specifically expressed the need and asked for some help and advice on these matters.

Due to the knowledge gap, the executed deeds were directed at small concrete actions. Minor problems were certain, and it was possible to deal with them instead of bigger or more contradictory changes or actions. It was easy and concrete to carry your own shopping bag with you instead of taking a plastic bag out of a shop or donate old clothes to recycling, and in this way to deal with the guilt that existed in your mind. This gave the feeling of doing something and executing the role of a decent citizen. What was interesting about the interview materials was that even those who clicked on the background form that they were not doing anything actually did something small. To major and even global problems, such as climate change, the use of oil or, in the report of one of the interviewees, population growth and the resulting problems as a small person you do not feel that you can make any difference.

The lack of know-how was clearly visible when the results are examined both in the light of the vague definitions of environmentally responsible consumption and in the light of the actual actions taken by the interviewees. With consumers, the gap between environmental attitudes and behavior can also seem small, as they do seek to do what is possible in the midst of the current infrastructure, everyday urgencies and habits.

They're already striving for something and trying to do little things. Concrete, visible, even though small acts exist in and easy and in a humane way and were therefore important to the interviewees. The view of the gap is based on the fact that committed people in the sector think much more should be done. In this context, consumers should be helped by developing communication, skills training on the necessary actions and provide easily accessible solutions to help them.

There is a feeling of guilt about the bad effects of consumption and the obligations of caring for nature, which are perceived at some level. However, the reaction is such that one does not think there are alternatives to living differently or people admit to being lazy when a particular thing is difficult. For example, recycling, versatile sorting and delivering waste to recycling points in a detached house could be described as difficult or the search for local food in many small stores. Guilt is also felt about not acquiring information about the supply and beneficial activities. Guilt could be felt even about driving a car, when in practice it was necessary to use the car in sparsely populated areas.

Frequent should expressions indicate that there is a feeling that something should be done or people should be guided. Should expressions suggest that people don't think things are still in order and there's guilt in the background about it. Linked to guilt, many respondents actually used the word lazy about themselves, saying that green solutions are so difficult and complex to find, compare and buy. The respondents did not have the necessary perseverance or knowledge to find solutions that would be ecologically more efficient than those normally traded and available. They suggested that solutions should be in normal shops, be easy to find, look and feel normal and be cost-procurable. However, the guilt was also related to evading responsibility, desire for comfort, laziness and habits. "There's nothing a little person can do" - expression was just that.

Familiar and understandable was perceived as positive and strange and unclear negative. The need for a sense of normality is highlighted in comments such as: "You can't feed in anything weird or fanatical, it has to feel ordinary." The old habits

were easy to carry on and a clear obstacle to new choices and lifestyles. For example, something was considered good, such as local food, but then it was granted that there was no such habit as buying or looking for it. Due to it being easy, the consumer succumbs to going to supermarkets. One of the respondents said that you start to be and feel that you have to be normal to be able to run your everyday life. The change preventing everyday requirements included respondents facing a wide range of issues, such as childcare, youth consumption habits, hobbies, work requirements or cooking in the midst of a rush. One interviewee even stated that he would raise his hat to Greenpeace and for their activism, but only if no other people got to hear it because he doesn't want to be labelled fanatical. He appreciated Greenpeace type of activities because nothing seemed to wake people up in everyday life when we are so numb and caught up in old patterns.

A lot of people say they're lazy, or at least half-lazy. Greenness therefore as mental image requires the use of special resources. The laziness of settling matters is accompanied by the notion that information is difficult to access, contradictory and that environmental responsibility issues are complex as well as product production chains. Clearing up all the information related to sustainable living would be particularly demanding. It would also be too much to try to think about every different consumption decision. The excessive and extreme feeling requirements of eco-friendliness were put into words in explanations such as, if we would be ecological, so should we live like Linkola (a well-known Finnish eco activist who lived in remote forest), which is not possible.

The interviewees listed a lot of everyday activities that they found both possible responsible consumption activities and, on the other hand, difficult. It's hard to find local food. In concrete terms, it is difficult to find alternatives to, for example, effectively (and brutally) produced chicken. You can't go looking for it, so it should be available in a shop nearby. Finding recycling points is tricky and even they change location

once you've once found a place. In particular, finding recycling points for clothes was considered difficult. If the solution action is too complicated, then people will not use it. In addition, combining the various eco-functions together was perceived to be particularly difficult: a long journey by public transport shakes off the enthusiasm to look for organic food in scattered small shops. Changing the whole way of life is particularly difficult, while one off, concrete actions are clearly easier to deal with. However, one respondent thought positively that “even small actions are important because they change attitudes, and the transfer effect can be significant”.

Very concrete obstacles to environmentally responsible activities were produced by the environmental contexts in which the interviewees operated. Solutions in our surroundings do not necessarily support environmentally responsible activities. After walking the dog, you will take a car to visit the store, although you could walk there, but there is no place to leave the dog waiting in front of the shop. There was also indignation about the opportunities offered by the environment, with citizens being accused of things that “a small person, an individual citizen cannot influence when actually the infra circumstances have not been made so that they can even try”. For example, questions were made as to what kind of cycling routes have been made and where you can cycle or how to even get information about where you can cycle? Recycling bins can be hidden or replaced without any information. They're far away and further than a convenient way or demand a car ride.

There were also questions about what ownership means in sustainability. It was usually seen that ownership raised the level of responsibility. Some of the respondents had at least thought about installing solar panels in their own house. In blocks of flats, especially rented dwellings, it was not relevant or possible. Tenants were not seen to care about water consumption, for example. Measuring consumption was seen to be important. Own water meters in blocks of flats were infrastructure that supported efficient operation, because the individual really had to pay for what he or she was

consuming. On the other hand, the interview revealed that one's own infrastructure may not be organized to support environmentally responsible activities if it is experienced as difficulty. This was evident, for example, with biowaste containers that single-family houses had not acquired because they smelled or were pricey.

In everyday life, shops in particular form part of the infrastructure that supports operations. What matters when it comes to grocery stores is what and where they put on offer and what, for example, can easily be obtained from a convenience store. One of the issues that sparked discussion in the respondents was that local and organic options are not marketed prominently enough. The store should present in an easily visible way what options are available. This meant displaying visually and quickly to discover, not in a way that demanded a long time exploring the products themselves. Recycling stores also considered that they could be "arranged to be easier to shop in" to find the things people need. Comments were also made on the location of the flea markets far from the city center. They should be easily accessible on foot or by bike, in settlements, and not in the periphery of the city that require cars. In terms of purchasing goods, the various social media sharing groups were seen as infrastructure supporting environmentally responsible consumption.

Location and accessibility had many meanings in what it was possible to do in the midst of a busy life or in choosing options for mobility. In Infrastructure, the difference between the Helsinki region and Joensuu became clear. There is really enough public transport in the Helsinki metropolitan area, at least in the city center and its surroundings, to move around without a car. In the Joensuu region, there are not enough public transport opportunities for many people to survive without a car. Even an employer was found to have demanded access to a car. The importance of location and distances is also underlined by the comments that arose for driverless residents of Helsinki when they stated that this service should come to the city center to serve people without a car because they cannot reach far away recycle centers in suburbs.

It was even said that it is bad admiring and consuming nature because when you want a natural landscape and cottage nature, you always need a car as public transport just decreases. The summer cottage landscape and the pile of wood are idealized as an ecological life form, but still, someone said, an efficient infrastructure can only be easily arranged in a tight living community. Due to Finland's location and the effects of the long winter, comments were also made on how cycling is not a full-year mobility solution in Finland and the operating season of solar panels in Finland is short.

Attention was also paid to public regulation and subsidies, government measures, reminders and guidance in the comments of some of the interviewees. As obstacles, this was reflected in comments such as: “Most a small person can do, for example, is to recycle and this is tinkering. In the case of great influence, the state should create tougher regulations.” So even radical public sector and similar mechanisms were seen as important. As in emissions trading –the problem at macro level is the same as at the micro level – everyone needs to get to commit. Industrial choices and policy decisions were also seen as significant, because the consumer's willingness to do things was seen to be influenced by the fact that industry worked together with consumers and that the whole system must be made to work in the same direction. This was clearly a question of credibility and included not wanting to go into big life changes if it was not seen that the whole system was involved. Some respondents also spoke of the importance of political influence. It was up to politicians to build environmentally responsible social structures and infrastructure. Individual measures on consumption were not considered sufficient. With regard to the comment on “green consumption is political”, one may also wonder whether it is so precisely because, as several interviewees pointed out, if they wish to consume in a green way, they have to act partly against the system of rules in society and the aspirations of economic growth. It is therefore difficult to implement, requires ideological determination and a sense of action that deviates from the normal behavior of the community.

Themes in the material proposing environmental responsibility interests

This section of the analysis opens up the content of the discussions about the interests that the interviewees had in relation to or can be associated with environmental responsibility issues. An important point is that the interests that emerged from previous research into design and consumption explained that people did not necessarily receive their greatest motivation for protecting nature but related in many ways to their own well-being and that of the family, for example. However, this section deals with the issues raised by now accounted interviews about ideas where to influence, through consumer interest and even passion, consumer spending activities that have a real impact on the state of the environment.

When you look at the themes that are most important in everyday life, such as housing, mobility, food and goods, the discussion around them is of course interesting. Although the environmental impacts of housing are calculated form the largest proportion in the Finnish conditions and mobility the second largest before consuming food, the interviewees were actually thinking least about changes in housing. Most of all they were considering their own ways of buying food, the composition of the food and how they prepare it. The second most discussion was on the purchase and recycling of goods and then, to some extent, on mobility, directly with the image of a bicycle and a car as a stimulation material. Housing-related discussion focused most on nostalgic cottage perspectives, not so much on solutions to living in the city. Housing was mainly talked about by those who had a construction project going on or had performed one recently.

In the image task, respondents often sorted images that felt positive, and even those related to green consumption in general, as positive, but not impressive, when the issue was not closely related to their lives. Personal situation was interestingly relevant in relation to what kind of environmentally responsible issue was considered important. If the respondent did not have children or grandchildren, then the forest

walk with the children did not touch. Cycling doesn't seem impressive when it's not possible for yourself due to some physical disability or allergy. You couldn't put solar panels in the rental house, which is why it didn't particularly touch or interest you. Especially positive and impressive or negative and impressive had come from something connected to and within personal experience.

Solar panels had been thought of on the roof of the house, for example, during the construction phase of own house or with renovations. There were solar panels in peoples' cottage use and pride was even expressed for it. Something that was useful for me was found interesting, such as the fact that the compost of a housing company can be soiled. After gasoline in the water in a particular suburb, it raised the question that clean water is not always in self-evident supply. The rise of water in one's own cottage up to the flood level promoted to realize how things can go badly and even that climate change is a reality. The respondent, who works in forestry, had begun to notice how the storms affect forests and only that had convinced him of the reality of climate change. It was very clear from the interview material that people are not moved by things that do not affect one's own life or cannot be imagined to affect them either. The impact and interest arose either from the fact that something topical and important was involved, or that some communication - such as documentary photography or document films - had brought it so close, for example from the point of view of individual strangers on the other side of the world, that it was possible to identify with it and think that this could also happen in one's own circle. People described this sense of identification when looking at certain negative pictures and wondering if you would lose your home or if this could happen in a nearby house.

Food was the main object of interest among the interviewees, although there were only a few related pictures in the image material. Good, healthy food was important to the respondents. When it comes to food, the interviewees discussed a lot about clean, unprocessed local food. Local food was often even put before organic food in

the appreciation, although organic food was also referred to as a green alternative that would have been preferred. There was also much discussion about how to go back to basics, use unprocessed, fresh, local production, as well as organic food. The origin of the food and its handling were important. In the comments of one of the interviewees, genetic manipulation was mentioned as evil. When it comes to vegetables, there was even talk about growing food yourself. One interviewee mentioned buying food according to the seasons, and another said that a good mother's competitive spirit was even bad for her, but for young mothers it was an incentive to make healthy "decent" food. What emerged from the debate was that food was actually more important than nature. This was accompanied by the fact that a cooking trend involving the use of fresh raw materials had risen to the surface. In fact, male interviewees talked more about this than women. At the workplace, cooking and local food were discussed, and a couple of workplaces even had purchased local meat as a joint purchase.

Vegetarian food came up as a more ecological alternative than eating meat. Many of the interviewees who ate meat said that more emphasis should be placed on vegetables. A few reported an analysis of how much more land area is required for meat production than the same amount of food for vegetable cultivation. Three of the interviewees said they were vegetarians at least sometimes, but one of them reported it being purely for health reasons. Several of the older respondents said that they had gradually reduced meat consumption, and this was also often associated with health. However, the message that the use of vegetables needs to be increased, because they are less burdensome, seemed to have already got through quite well among the respondents who took part in this interview. This despite the fact that most of them did not implement it as a complete vegetarian practice.

After all, many of the interviewees talked a lot about local production, even though they started a discussion about organic. After the beginning of the discussion, they said that in fact they would rather talk about local production. The idea that often emerged

in discussions was to want as little processed food as possible, this emphasizing the impression that a long chain of preparation increases additives and reduces the natural health effects of food. Domesticity was clearly related to perceptions of local food, although only a few mentioned it as a term. The comments comparing food production clearly showed that food produced in Finland was thought to be cleaner than food produced elsewhere. Finnish vegetables and meat were perceived as pure, even if they were not organic. Growing food yourself, growing your own vegetables, was perceived as particularly green. However, availability and ease of purchase were important for the interviewees and a challenge on the other hand. Some of the interviewees consider that the purchase of a local product must not do more harm than its benefits. You have to think about not going around the countryside by car to get your local vegetables. Support for local production was also accompanied by the fact that some said that they were trying to avoid international brand companies. Nearby production was therefore important. Large companies and their global chains were suspected. In fact, several interviewees of different age said that there were suspicious about everything that was coming from the US.

An important and sensitive relationship with animals and their treatment was particularly highlighted in discussions related to food, although meat consumption also focused on the different environmental impacts of meat production. In the whole food debate and food-related consumption behavior, meat consumption in particular, gave rise to a surprisingly lot of discussions. Some respondents still confessed that they liked meat so much that they wouldn't stop eating it. Some wondered whether meat consumption should be stopped or reduced. In particular, red meat was mentioned and avoiding its use. People were wondering if red meat could ever be green. Some of the interviewees presented arguments as to why they have not completely moved away from meat use. The interviewees seemed to have a certain idea of good meat, which was allowed to be eaten. These included local meat, meat from a free-ranged animals,

meat grown in natural conditions, organic meat and wildlife such as moose meat. There were a lot of conflicts. Red meat was found to be bad, but in Finland it was thought that cows could often graze. White meat, on the other hand, grows in intensive production plants such as broilers and good alternatives are scarce in it, although it is more ecological in carbon footprint than red meat. Power production was a typical negative word used from it. Organic meat or, in particular, meat from animals grown in free conditions, was perceived as a good and had also better taste but was more expensive.

A couple of interviewees distinguished between the treatment of animals (animal rights) and green consumption – they said it was another matter how green meat production is. Intensive production may be greener than organic production. In general, this possibility was not observed, but organic, and local meat in particular was taken for granted as good. Many said they eat meat, but most felt that the mistreatment of animals was distressing and hurting. This was accompanied by a nuance of guilt in eating meat, even if you could reduce eating it. Some also said they had consciously reduced meat consumption. The debate on animal conditions was very plentiful. On the other hand, it was also expressed that ”I like eating meat, but I hope that animals will be treated well”. One interviewee said, however, when considering the mistreatment of animals that the children of the world should be cared for first and only then animals.

In relation to the treatment of animals, several interviewees also commented that people need their livelihoods. However, this perspective was not so strongly linked to the issue of transparency in the production chain, except in the report of one respondent, in which she buys from acquaintances precisely in favor of their small-scale production. In it, she even knows the name of the animal the meat she has bought is from. From the experience of childhood in rural areas, it was claimed that on countryside, the social community monitors good practice when it comes to animals. Those who moved from farms to the city pointed out that, in their experience, animals

are treated well on land. Meat production was also seen as positive if it was linked to the countryside production and to the appreciation of food production in rural areas. Residents of the Helsinki region also had a lot of these ideas.

As a big theme in relation to environmentally responsible consumption, the interviewees highlighted well-being and health. Clean air and food and nature sports were sources of healthiness. Clean was healthy. Most people thought pure carrots were healthy. Health was attached to the food and local meat. For example, one interviewee commented that if you have allergies, you pay attention to cleanliness and buy organic food. Intensive production was seen to connect to people's health problems. The image of eco and organic food is also accompanied by the fact that only healthy foods are like this: ”if someone should say to buy a doughnut as organic food then no thanks, but if someone comes and says to buy organic local food as blueberry smoothie then you could go”. At the same time, organic, local and eco food is assumed to be healthy. This also seemed to be linked to the idea that unhealthy food is an unnecessary luxury, and that eco-friendliness is reasonable. These things are intertwined.

Some of the pictures in the interview images drew respondent to think about ways of moving around in everyday life. In particular, the Freedom bike image directed to discuss cycling as part of everyday exercise. Some of the interviewees said they were cycling in Helsinki and the suburbs were perceived to have good routes. Someone even said, "At night-time bicycling is the best way to move around the city." Cycling was described as emission-free, but particular emphasis was placed on how it is healthy and health-promoting. It was precisely for health reasons that cycling could have started, rather than for ecological reasons. One of the respondents who had given up the car was excited to say that she already owned three bicycles. On the other hand, there were also doubts about health reasons: "Cycling is not the solution in Finland because of the climate." Slipping and cold were suspected of being health threats. "I don't cycle in Helsinki because the air is so bad" was also commented. The allergic

interviewee said that you cannot cycle in Helsinki because the air is so unclean and, in a small, previous hometown you can cycle because the air was clean.

Exercise in nature was important for many of the interviewees. This manifested itself in reactions to the snowy winter image, which was considered positive and impressive. It was feared that the sports and enjoyment of nature during the winter would have to be abandoned if winters deteriorated. The image of an adult walking along a forest path with children also sparked a lot of discussion about the importance of moving in the nature as a hobby and its well-being effects. Moving around in the nearby environments was considered good, but the more far away nature tourism activities were also frowned upon. This also applied to summer cottages, which were considered a good form of nature experience and stay in the nature, but due to long car journeys, some interviewees also doubted their ecological nature. In nature and in a peaceful cottage life, the stay was also strongly linked to the possibilities of improving well-being in contrast to busy and pressured everyday life in the cities. Well-being and happiness were sought in the peace, silence and stress-free, nostalgic life in the nature. The interviewees used expressions such as "your soul rests in Lapland" about moving around the natural landscape. Cottage life was considered a means of calming down and an opportunity to practice a form of slow life that produces calming down. Activities in the countryside and in the nature were considered therapeutic.

Traditions and nostalgic lifestyles, as well as stress free lives, were very strongly highlighted as an idea put forward by the interviewees in terms of ecologically sustainable consumption. Cleanliness and traditional working methods were combined with nature: red earth-based paint and dyeing in natural plant colors. Similarly, naturalness and the environmental proximity of nostalgic working methods were uncritically attached to them. City images, on the other hand, were easily combined with dirt and pollution. Another interesting aspect of the nature relationship is that even young people in Finland may be forest owners, and many city dwellers are also

from the country. In such contexts, nature is also seen as a means of utilization and a means of livelihood. However, no one of the respondents started the discussion on the growth of carbon sinks in forest or field use as an opportunity for their own environmental responsibility.

Most of the interviewees saw the nostalgic, past lifestyle as positive, environmentally friendly and as a model of living in balance with the nature. Summer cottage life reminded them of this. It was even proposed that retro life practices should be used to address environmental problems and the environmentally destructive consumption effects. Slow life - the idea of a cottage life, for example, involved being nature-saving and it was soothing to the human mind. Peace instead of stress was combined to people's longing for old lifestyles. It also involved the usage time aspect, when people started thinking about how to use their time better than by spending. "A nostalgic lifestyle at a summer house takes people closer to nature and away from consumer behavior." In general, green consumption was associated with the wish that it should not only be about scarcity, but actually produce a better life.

In respondents' thoughts nostalgic, traditional life also included inhaling, frugality and referring to a moderate economy. Slow food and local food were also included, even growing the food itself. Some of the interviewees also mentioned the spirit and lifestyle of grannies' places, as well as the real fire that represented home type of coziness. They referred to the cocooning lifestyle trend that has been in fashion during many past years. The descriptions of the nostalgic, past life form were accompanied by the fact that it was perceived as the opposite of industrial and urban and therefore good. This way of thinking was accompanied by the hidden message that the industrial way of life is polluting. However, some of the interviewees also commented that there is no return to the lifestyles of the past. This still, even if the interviewees were clearly against any given idea of sustained economic growth.

"Not always spending all our free time on consumption, but on doing some intangible things, and of course, for green consumption, by protecting the environment, then we can still have the nature where we can also move around."

The idea of what else to do other than consume seemed to interest many of the interviewees. Would other things make people happier? The use of time was considered sustainable if it was handicrafts or exercise in the nature. Green could clearly be accompanied by something other than saving and scarcity. It is possible to associate it with a positive feeling and a better life: the promise of happiness. Scarcity and complexity are not attractive operating scenarios and only the most committed are able to join on these terms. A slow lifestyle, nostalgic, stress-free and goods-minded was a positive contrast to busy city life that was associated with lot of spending and a rapid flow of discards. During the interview, respondents considered in particular how to use their free time for something better than consuming products: enjoying food, travelling, nature excursions, crafts and social togetherness with people in different ways.

Bicycling meant freedom and self-made mobility, freedom to do as you wish, to follow your own paths. A big quantity of goods was also presented as a prison and surviving with a little amount of goods meant a bonus of freedom. The crafts production felt ecological for some of the respondents because it is a good way to spend time and was perceived as a low-consumption production, for which reasons it was a much better alternative to the use of time than shopping. Several also mentioned growing vegetables themselves as particularly ecological means of food production. All this in some way refers to the ideal of a self-sufficient economy.

The general perceptions by which the respondents reported the quantity of goods and its necessity pointed to guilt for their own indifference and laziness. They spoke of difficulties in acting against the heavy tsunami of consumption. "More stuff and

stuff and ads about the stuff, does this make any sense anymore, and I haven't done anything against this absurdity." Reference was also made to the need for economic growth: “Polluting production processes must continue to keep us satisfied”. There was also commentary on huge amounts of consumption in parts of the world other than Finland, which led to doubts as to whether it would make any difference if you tried to do something yourself. Inspired by the image of an African little boy standing in front of a mountain of waste, respondents also discussed the fact that the waste we produce can end up somewhere else in the world and cause harm there. This also referred to how we do not pay the price for products that should be paid for them, given the disadvantage they cause in some other places than in our environment and to us. In particular, the disposal of electronic waste and the resulting health problems, when electronics are dismantled in poor conditions, was a matter that some of the interviewees added to the discussion.

Many respondents discussed the unnecessary and unbridled amount of goods that were too much when consumption had "got out of hand." The common factor was the overly low product prices, which even allowed those in a not so economically good position to buy excessive amounts of goods. The conclusion drawn from the cheap price was that then the manufacturing did not care about environmental issues. The excessive number of packages in which the goods were offered by shops was also a cause for concern. Disposable and single-use products were considered evil. For some reason, there is clearly a certain basic respect for materials and products, which was indicated by the disapproval of the purchase of unnecessary goods and lightly done discards for them.

Some respondents noted that household sizes are shrinking and in this respect they actually need smaller amounts, even though shops are trying to sell large pack sizes. Another aspect of the excessive supply, which was taken into account, was the excessive amount of choice that was difficult for the consumer to control. Excessive

consumption and the amount of goods were seen to contribute to climate change, species extinction and other nature-destroying problems. The respondents own battles with excessive goods at home were involved in discussions and a few of the interviewees admitted that they did not manage this well.

The piles of waste made excessive consumption visible to the interviewees. They refer to the reckless use of materials and energy reserves, producing large quantities of landfill waste, electronic waste and plastic for the seas. The piles also remind us how waste should not end up in joint sorts of waste but should be able to be recycled. However, the end result of these concerns was that many of the interviewees thought they were allowed to keep their excessive amount of goods at home or to store it.

There was an important interest with excess and rapidly discarded consumption. The interviewees had aspirations to "not always get the cheapest" or carefully consider shopping and design or buy goods only for long-term purposes. This was even done deliberately at a high price because it seemed to guarantee sustainable, long-lasting quality. The Finnish phrase "poor people should not buy cheap" was raised. Even thinking about easy recycling opportunities was raised as a purchasing criterion. It restricted people from buying much when they thought they should actually have the resources to check and know about the product's background, such as working conditions during production. Information on the origin of the product and the transparent production process was needed. However, the respondents felt that it was difficult to obtain information on materials, energy sources or water consumption in production. Respondents seemed more interested socially in human conditions than in the use of natural resources in the product or the impact of production on nature. Ethical and social were already included in the ecological thinking, so that if people were mistreated, then producers do not care about the harm done to nature either. The interviewees had sometimes stopped buying some products altogether because the company was associated with allegations of mistreatment of workers or some other

suspicious activities. These ideas and doubts were particularly related to the activities of large international companies.

Respondents did not account much of their own product repair activities. The old wooden building gave rise to positive thoughts about the value of keeping old houses in good condition and extending the life cycle of buildings. Some mentions of repairing houses with old parts were found in the interviewees' own actions. However, many were considering how to extend the life cycle of products when they are repaired, stored well and recycled. Some also discussed how this slows down material flows. Keeping goods for a long time also pointed to the importance of generating less waste. The difficulty of repairing modern products was also highlighted. One interviewee said he used an old car that even consumes a lot of gasoline because it was simple technology that you can repair yourself.

Not all respondents included handicrafts as part of green spending because it seemed like just a hobby that some people practiced. The connection to crafts skills was really broken for many respondents, and the image of hand knitting did not spark a debate about the possibility of repairing products. For some respondents, handicraft sent a message about ecological consumption because it involved nostalgia and time to do and repair with your own hands. The interviews also featured idealization towards the self-sufficient economy in hobbies such as growing your own vegetables or making your own logs into firewood, but not in the sense of repairing or adapting pre-owned products. For those respondents who still had a relationship with doing things at hand, it meant that you can make the products yourself and from good materials. It was meaningful to own a self-made product and it was especially valuable if someone close to you had done something to you with their own hands. Doing it yourself also meant that you got exactly what you want.

Longevity in products was also seen as a saving. The interviewees reported of their efforts to buy a new product only when there is a real need for a new one, and efforts to

buy long-lasting or used products. The theme of saving was also highlighted in many other ways: trying to snuff out and save electricity or water. One interviewee specifically related saving money to a desire to contribute to preventing the spread of climate change. Another said he is trying to save on energy consumption of a detached house, but more as a cost issue. The synergia of different activities and consumption was considered, for example, when food was cooked in the baking oven at the same time as the house was heated with the same device. People's desire to make a difference was reported by a case where, at the request of residents, apartment-specific water meters had been installed in a block of flats to support thrifty water use. In particular, some of the interviewees told that they were trying to teach the children reasonable water use.

Some of the interviewees also made calculations about their consumption and opportunities to save money. For example, in connection with the renovation, some had investigated the possibility of solar panels and related investments and repayment periods. Some people couldn't make this kind of calculations and they say without true investigations that they can't afford this kind of things (e.g. solar panels). However, on the spot household expenses were clearly on so high level for many of the respondents that even cost-effective perseverance cannot be afforded if it requires large one-off investments. It wasn't just a question of not bothering to count any further.

Housing was mainly talked about by those who had a construction project going on. The aim in a detached house was to save energy and some of the residents of detached houses were thinking about the possibility of solar panels. Little was presented of the actual rethinking of the forms of housing. There were no radical reflections on the impact of square meters per inhabitant, for example. One young man told that before a new relationship he lived in a commune. Someone from Helsinki had chosen an apartment in the eco-area, even though she didn't feel like an eco-person. Another housing decision taken in Helsinki related to the fact that the site made it possible to use the public transportation. A few expressed interest in a modest living

style- such as a naturally red painted cottage - on the countryside and far away from everything. "Nostalgic life form is also attractive" was also reported by a number of other interviewees, but actually close to the good public transport links. The stories of several interviewees revealed a summer cottage owned by the family. Solar panels were often labelled as a suitable solution for a cottage to produce energy than as an opportunity to save energy costs in the city.

Self-sufficiency was clearly part of frugality projects. Making logs brought positive images to many because it involved self-making and was a local fuel, even free if the wood came from their own cottage plot. It also brought to mind a lifestyle based on self-sufficiency and old-fashioned close to the nature lifestyle. Clearly, the possibility of doing your own concrete work was motivating (even if it was a small thing) if there is a visible result.

> *"You just think about doing these small things that are good to do and that's how things gradually turn around. It has to come from within, there is a negative effect if someone is forcibly trying to make you change. You eat all food away."*

Small concrete things, which also involved thrift, included local food, green electricity, shopping bags, cycling, public transport, saving water, buying only what was necessary, buying long-lasting products, using recycled goods, composting, growing your own vegetables, picking berries, making logs, wood heating and installing solar panels. It was much harder to move on to thinking about the bigger things that a few interviewees had done: to give up the car and resolve the living solutions by reducing the square meters.

In relation to thrift and the price of solutions, the interviewees' expressed the kind of notions that it is more expensive to make the environmentally responsible choices than

less of such. In many comments, there was a notion of “smoke from China's low-cost products”, so there was no environmental price included in these products. On the other hand, it was trumpeted and resented that people were acquiring a lot cheap and short-lived products. However, many of those who thought that they were earning average wages also thought that ecological alternatives were expensive. Even if the respondents had been environmentally friendly in their actions and attitudes, they could say that buying environmentally is too expensive: solar panels were too expensive, recycling in a detached house is expensive, organic and local food was too expensive and Finnish meat was too expensive. With regard to food in particular, comments were made that it could not be afforded. This also led to varying consumption habits in relation to how there was money at any given time: "Closer to payday you like organic and the further it goes, much less". In terms of price, several interviewees interestingly stated, when viewing the image of solar panels and wind turbines, that the images were positive because "wind and solar power are free energy sources". There is a positive side to be found from environmentally conscious activities in terms of frugality and price.

Recycling was one part of the savings. In interviews, the participants' main topics on environmentally responsible, green consumption concerned recycling. The use of recycled products was common among respondents, and even visiting flea markets was a pastime. At least cars, clothes and books were seen as possible to buy second-hand. The balance between new and old also caused a headache.

> *"What is the relationship between new and old? You think about it every day. It may feel good to buy a new energy-efficient lamp, but should you use the old one to the end."*

When it came to products such as baby clothes or toys, there was a discussion that even nothing was bought new, but everything was sourced from flea markets or received

from friends because their lifespan was so short. One older woman told how she buys products from flea markets for her grandchildren, but she doesn't tell her the products are from there because she doesn't think the teens would approve of this. However, another mother said that her 11-year-old daughter, who was addicted to shopping, accepted the purchases from the flea markets. The popularity of flea markets was linked to the fact that the respondents believed that good stuff could be found there.

On the other hand, respondents also wrestled with the pain of excessive amounts of goods, related to the need to buy and the longing for fewer but long-lasting products. The respondents explained how they sought to dispose of the excessive amount of goods by recycling in all different ways. Cleaning operations were even described as all the life clearing ones. This was also a reference to the trendy Marie Kondo-type of life organizing advice, which helps people to turn their homes with excessive amounts of goods into spaces of peace and inspiration (Kondo 2014). Recycling most often meant sorting waste and taking it to a dumpster or to other recycling points. It also partly involved a discussion on flea markets and the recycling of old goods for other people's use. It was important for many of the interviewees to at least try to recycle. Perhaps it is precisely because of its concreteness that it is the most understandable way of trying to do something. You can also see it if you don't do it. An interesting observation was also that recycling can be considered a skill. It takes time and dedication. Different approaches to recycling involved distributing waste to the right sorts. This sorting of waste was even described as a "skills-demanding activity". Recycling of goods for reuse was considered important and practiced if it was seen that the goods were usable for someone else, even though you no longer needed them yourself.

As a concrete phenomenon, piles of waste mobilized people's perceptions: different images of waste mountains from around the world, plastic pollution in the sea, dead birds, exporting electronic waste to Africa to pollute nature and handling it under poor conditions. Even an African boy in front of a pile of waste was an "eco-

thing" when it pointed to recycling happening in Africa. On the other hand, the interviewees also commented critically that recycling should take place where the waste is actually produced.

Recycling was seen as a good way of doing at least something and as some kind of citizen's duty to a sustainable lifestyle. Probably the concrete nature of recycling makes it such a typical and rewarding function when you can sort of see your achievements. Even the kind of Facebook campaign was reported, where dry waste from one week had been asked to be collected in one pile and then to take a photograph form it and share this photo so people could see the amounts of waste that would be generated. The purpose of this was then to get people activated for waste sorting for reuse purposes. A number of interviewees mentioned the fact that each year global use of raw materials has exceeded natural capacity in the past and concerns were expressed how enough raw materials would be available for the next generation. This, too, was a reason to recycle. Respondents living in suburbs and sparsely populated areas complained that recycling opportunities were not easily accessible. Some respondents expressed doubts as to whether the material sorted by consumers actually became available or whether it was put together at the end of the collection process with the waste from the landfill site. Transparency and credibility of the process are therefore extremely important issues.

Common activities with items that were unnecessary but useful were to take them to recycling points or flea markets. Some respondents complained that there were not enough suitable places to take those products that could still be useful to someone. In some residential areas, special recycling events or points and Facebook-type exchange opportunities for unnecessary goods had even been arranged. The stimulus images of the interview showed a picture of a book exchange point at Helsinki Airport, which, as a picture, caused confusion. When the respondents understood what it was, they found it to be a nice, delightful and sensible idea. "An easy way to reduce spending." It

was the kind of practical help they felt they needed to share things. There were hopes for the respondents that if the product was not used as such, it would at least be used as material for some lower value products. The sale of products was rarely mentioned. Instead, giving friends products was more typical in the interview discussions, such as donating sports equipment for younger children than your own. Other people were reproached if they didn't recycle properly. People admitted of doing searched through backyard waste bins to find usable goods, or they exchanged other people's waste for the correct waste bins. Recycling and waste management were also negatively seen as expensive, cumbersome and produced some nasty experiences, such as bad smells. What was important was that it had to be easy, pleasant and cheap for consumers.

Finally, access to information and sociality were also clear interests raised in the interview. They emerged as such strong themes and content in relation to how environmentally responsible solutions should be developed that they have been highlighted in this publication as their own analysis areas. In addition to interest, they also involve a lot of obstacles.

Credibility and availability of information

One big question in the minds of the interviewees was the difficult availability and ambiguity of information on the state of the environment and the possibilities of their own activities, often as an experience of contradiction. The information is contradictory. One source or media says one thing and another source says another.

> *"I don't really know what I think about this climate change, but it doesn't affect me in any way, because I read about climate change, you don't have it or it is, and I don't know who's right, so I don't care about it either."*

Information on environmental issues and responsibility had also been learned to be doubted because the interviewees had the feeling that, after a few years, a new, negative aspect of a previously proven solution would be brought out in the media. "This world is like that, you don't know what to believe in" the comment reflects well on the concerns about the environmental responsibility information in the interview material. The interviewees also think a lot about what would make sense when conflicting information comes in. Doubts were expressed both with your own abilities about what information to seek and find and to companies, what information they share. One analytical interviewee even wondered how the information obtained through the professional journals he ordered and read, and especially politically biased ones, could be weighted. Ignorance or uncertainty and conflicting information about access to information led to uncertainty and guilt about what one can unknowingly do. Contradictory information also led to no longer daring to believe everything that was in the papers. Lessons had also been learned to question and doubt things, but unfortunately also to doubt big and serious issues such as climate change.

Through the image stimulus the doubt was reflected in the contrasting associations and reflections that the images and the things contained in them aroused: whether this was bad or good, and whether it was something polluting or not. In particular, those interviewed who were eventually interpreting wind turbines and solar panels for renewable energy as positive and impressive agonized over conflicting considerations. There had been a lot of public media and social media discussion on the issue of the wind power, because groups had been set up to oppose the construction of wind turbines and they disseminated information that their start-up and construction costs are higher in terms of carbon footprint and financially, than energy output during the life span of the power plant. This way of thinking had partly spread to the general debate and some of the interviewees expressed such a view. The same doubts were expressed about the use of solar panels.

The contradiction and uncertainty of knowledge frightens and distresses. It scared respondents that the truth is not being told and there might be something behind large international corporations such as forest companies in Finland, that is not being told. Manufacturing chains that are not known scare you. Our own actions and choices, from which we do not have enough knowledge and understanding were even thought to have an impact on many things, such as the increase in storms or air pollution. There was no information as to whether the products you use were manufactured by the polluting factory or whether the clothes you buy were made in inhumane sweats workshops.

In the interviews, you could hear through the idea that the respondents were willing to do things when they understood what to do and the doing and impact is concretely visible. Information and phenomena in the media should provide a feeling that you can justifiably do something – not just that you're left with anxiety on how bad things are. It is important to bring out real environmental action and results in a concrete and comprehensible way.

Some of the interviewees said that they would only like to be influenced by positive things, while others found intimidation necessary in the midst of numbness in everyday life. In the positive communication of information, the problem was admittedly that we consider all the good too self-evident, such as clean nature or a lot of water. For this reason, the mere relationship with nature is clearly not necessarily impressive, even though it has been used a lot in environmentally responsible communications.

Concerning the different motivational interests presented in the previous chapter, more attention could be paid to influencing through these in positive communication. Issues that are important to consumers, such as health and the recreation of well-being, can support the change in consumption to an environmentally responsible direction. The interviewees also had rather light and positive views that the consumer can make a difference without much needing to compromise on living standards. All it would take is practical advice on what everyday things to do in a new way and what to

pay particular attention to. Of course, the information is also preferably perceived with your own points of views. If something one does is bad, then one puts an emphasis on some other information related to what one does and it makes you feel better. This seemed to happen easily.

Positive images where everything is fine may not also be impressive because they don't bring your mind the change that you would be able to do something like negative images bring. What can I do to correct this question arises with negative scary scenarios? Few interviewees said in particular that they would do something to preserve clean nature and the idea of winter disappearing instead was scary. However, it definitely demands instructions on what the consumers can start doing themselves when negative intimidation and visions are presented. Mere intimidation clearly causes anxiety and a “an individual person can't do anything” reaction.

The interviewees talked about the need to obtain factual information. Discussions must also be critically interpreted as to what this meant, because people need clear and quick advice and that information clearly and easily indicates why something is worth doing. The longing for factual information does not necessarily mean wanting to know how research is always uncertain and that things still need to be studied and tested, or that different local conditions have a very strong impact on how nature reacts or what consumers should do. One interviewee described how complexity and lack of absolute truths were difficult to understand because people need clear and quick advice. It should also be clearly explained and easy to understand why something is worth doing.

An important feature of science and research is the constant questioning and increase of knowledge and the understanding of uncertainty about the emergence of knowledge. This otherwise useful and knowledge-driven approach is hurting when people would probably want clear information instead of a conversation. Uncertainty and complexity are difficult and distressing. The problem is also that all kinds of information come in, but people do not really know what to grasp and in what way. All this is sensitive

to an individual consumer's mind. Many of the interviewees of this study were also interested in what could be done in everyday life, even though they don't feel like they're doing anything right now. The interviewees highlighted how important it would be to say as clearly and concretely as possible what could or should be done. However, there was even a debate about how information should not be imposed such as: "People should be made to look for information themselves, so it would get through better."

Some of the interviewees found information communication through demonstrations arousing and positive, but a larger proportion found that kind of means fanatical and negative. Normality was appreciated, "not a hippie thing" but "communication of facts" implicitly without "fussing". When interviewees talked about their needs for factual information in relation to nasty environmental issues, they often also associated it with not using a "fanatical accusing" way of communication. "In social media there is push about the world being destroyed kind of feel, as if that intimidation could find the solutions."

Fanaticism is perceived as evil: "Showing bloody animals is overdoing and exaggeration". For example, excessive propaganda by animal protection organizations provokes a backlash and then you even "start fights for the benefit of large farms". Some found the spectacular activism and the activities of environmental organizations really annoying and repugnant. Here, good and important issues of environmental responsibility turn to resistance if someone force-feeds them.

Of course, you can wonder why fanaticism annoys you: that you have a bad conscience when someone really dares to try to do something or because it violates agreed and legal or unspoken boundaries. For example, the interviewees explained that things are brought out a little spectacularly and is "even going to that other side of good taste". A few interviewees also explained their irritation by the fact that the actions of the activists do not produce concrete solutions but remain only fanatical in order to attract attention. Fanatic is the presentation of extremist perspectives. This is how

it is easily interpreted. Propaganda and information produced by non-governmental organizations (e.g. Greenpeace and WWF were mentioned) focusing on a specific issue is perceived as being presented with some provocation and highlighted by means of media attention.

> *"Some wonderful things come up, and some of them, as a miraculous mass, it comes from every channel, and there's a lot of discussion about them."*

One of the phenomena highlighted was, for example, the lively debate on the use of plastic, which is only a very small part of the multifaceted change and new measures needed to move to a sustainable lifestyle. Fragmented and strangely focused information shared in the media does not provide an image of the holistic effects of consumption and life-changing knowledge leading to impactful change.

In addition to clarity, concrete information in particular touches and influences. One of the interviewees said: 'Environmental issues are abstract, not consumable'. This also includes how difficult it was to comprehend anything that was not very concrete or that the not so concrete issues and phenomena had to be in some way concretized. For example, the things that appear straight forward visually were impressive, such as the concrete pollution from dark gray smoke or visible storm damage. Air pollution creates an extension of the impression that smoke is getting into the lungs and is difficult to breathe and the traces of the storm indicate how people are left homeless. Dehydrated soil is inconsolable because you can't grow anything in it when it is so dry. A concrete pile of waste makes you realize how much is being wasted. The air conditioning equipment installed for each occupant of the apartment building give concrete light to energy consumption: “It tells us how much energy is consumed by these things”. The oil fields are bleak and dirty, and then you realize how pumping oil out of the ground

pollutes and dirty oil, for example, awakens the imagination of what it is like when the same dirty oil is in the sea. Recycling and rubbish are visible both when you handle it and when you don't. On the other hand, if someone uses eco-electricity, it doesn't show. Earth day’s lights being shut down for an hour is a good concrete thing to be reminded how it is like to be without electricity.

More than external communication, the issues experienced concretely by yourself were particularly impressive. The flooding of one's own cottage and the entry of water inside the house led to believe in climate change. One of the interviewees told how he had actually seen in the countryside how animals are in distressing conditions when growing meat and this had affected his meat use habits. Individual, experience-based information was referred to as gaining impressive information, even in the case of a more general experience such as the winter that did not come.

Seeing things concretely awakes critical thinking, such as visiting a garbage center and seeing how much usable material seems to go wasted. The waste mountain attracts a lot of attention because it shows what accumulates over a longer time period. The concreteness of recycling and sorting makes it a suitable agenda where you can do things and the results are in some way visible and concrete. Doubts – concerning the part not visible - were expressed as to whether the waste sorted by the consumer would be mixed up and into a joint pile at the landfill. What is concrete is your own durable bag in the shop so that you do not have to take a plastic bag that ends up as waste.

Things that come up against you in everyday life concretely, as waste recycling containers, help to do things, because it is easy and at the same time they remind you: “It is the best way for my opinion, you almost stumble upon it”. Infra therefore has an impact. Concrete and facilitating infrastructure was a reminder and sharing of information that had an impact. In the center of Helsinki, it had been noted how people enthusiastically use waste pallets and pop-up points for problem waste. Such infrastructure also reminded people how you can live in the city center without a car,

since you can't get to a garbage center without a car. However, the problems of people without a car had been managed and services that exceeded them had been provided.

Some respondents were looking for information about things and would like factual information about the figures, even if it is difficult to find them. The other, half-lazy part of the respondents, admit they won't even try. There was a lot of need in the interviewees' comments and everyday reports about the easy availability and accessibility of information at times when you really need it. For example, it was considered difficult to obtain information on the different environmental impacts of products. This concerned issues such as the source from which the energy needed for goods and services had come from. It would be necessary to make a specific decision on the effects of different variables. There was so much marketing information in the shops that it would easily be hit by advertisements if something was attempted to add. This trajectory raised questions how important environmentally responsible information can be brought to light so that it is not at the feet of marketing materials and is easy to find.

The interviewees were able to describe how comparable information is understandable, especially the kind that can be compared to one's own previous experience and knowledge. The big numbers thrown into the air, on the other hand, are not understandable. If we are talking, for example, about energy consumption, the easiest way to understand is to obtain information about it in a form where it can be related to current own electricity use and electricity bills or heating costs. Comparing to something you know is also a proven way of communicating information about complex issues in an understandable way. A positive versus negative future opportunity as a comparison may be an appropriate way to communicate the effects of environmental actions, as comparison was a typical way of understanding. Comparison with something worse, or that things could get bad, brings out the obvious, good familiar things that exist, and you appreciate them more and want to protect them.

Sociological research has also found that human understanding and scathing things for some form of everyday clarity or building the understanding of one's own identity is largely - and perhaps also unfortunately, confrontational. In everyday life, two opposite extremes are easily interpreted within different phenomena as the groups in which things are categorized. (Jenks , 1998, 1-3). "Good electricity runs in windmills" (good – bad dichotomy). European manufacturing is of high quality contains references to the fact that what has been done elsewhere, for example in Asia, is not. The Chinese phenomenon is associated with cheap and polluting production and Finnish domestic is expensive, but more ecological. Even at the extreme end, there are questions about how other countries should be better and to save more as Finnish people do. However, such a note does not take into account the fact that Finnish people, too, consume much more than the earth's tolerance.

Some of the interviewees reflected on the idea that nothing is being done in China, so what one does in Finland does not matter. There felt to be no point in doing things if you are bothered by having to do things, when the impact of Nordic countries is minimal compared to what happens in Asia. However, other kinds of confrontations also emerged. Poverty, especially elsewhere, means frugality and excessive consumption in the West, on the other hand, wastefulness. However, poverty was also seen as a source of indifference, with hunger, poverty and lack of water as the situation of life related also to ignoring eco-issues. Respondents saw that a lot has been done, for example, for recycling, and elsewhere it was not organized. Yet, one of the interviewees also highlighted how recycling and monitoring have been organized efficiently in Germany and not in Finland. When it comes to fuels, the dichotomy was shown as a comparison free or expensive. Free energy from wind power or solar panels can replace expensive fossil fuels imported from elsewhere such as oil. Bio-based solutions and wood burning were also seen as a good alternative condition compared to nuclear power, coal or oil, which were branded as bad in the respondents'

explanations. The associations of the interviewees showed a lot of these comparisons of opposing forces or labels.

In this interview material, doubts aroused that it is always more expensive to make environmentally friendly solutions. In terms of price, the solutions require an account of why some environmentally responsible solution is pricey. From another perspective a discussion was also raised by a few of the interviewees about how the environmental price is not involved in cheap production. In particular, the smoke from a chimney raised a discussion how the prices of the products did not include the environmental price especially in the low-cost products from China. However, as far as price is concerned, it is also important to pay attention to explaining if the solution is not expensive or it is even saving, even though it is a real eco-product. In the case of wind and solar energy, it was often seen that they are even free sources of energy.

The collection of marketing studies on sustainability communication in the green economy states in its foreword that when communicating sustainability to consumers in a psychologically sophisticated way, it poses challenges that do not follow the typical rules of marketing communications. Sustainability marketing involves tools that lead to specific psychological responses and therefore require special attention to various marketing communication tactics. Sustainability already challenges the basic idea of promoting consumption. (Kahle & Gurel-Atay, 2014, ix).

This dilemma emerged significantly in the interviews, with respondents disapproving of the market machinery and how it attracts people to spend too much. Advertising is an attempt to create unnecessary needs, was the public perception. Many were annoyed by the abundance and advertising. What was interesting about the images from the ads in the stimulus material was how sensitively the interviewees distinguished them from the other images. They were also easily met with skepticism through this categorization. The typical word used to describe them was clichéd. The ads were easily identified from the selection of pictures because they were

perceived as too shiny and beautiful. Ads that sell something with environmental values were even found to be sickening. Advertisements from the image material were described as syrupy, pretense, artificial, nationalistic and postcard-like. The interviewees also described their message as underlined and hoped that such things would be communicated more intelligently and with some more profound idea in communication.

The images, identified as advertisements, were met with skepticism and considered manipulation involving solutions about their environmentally efficient nature and as polishing the company's surface with greenwashing. Large companies were easily seen as guilty and their desire to change their operations was suspected. The ethics of large companies were doubted and the long production and distribution chains involving many smaller companies were doubtful. The interviewees were left in doubt to ask how things are actually produced? The type of greenwashing message, in which the company strives to look good, also had interesting communication sides. If misinformation is revealed, people are reacting strongly to it today, and this kind of thing is driving companies to do the right thing on a large scale.

The Neste Oil advertisement, which was perceived as cheesy and polished, did not speak to most of the interviewees about ecology. This was also related to the fact that the faith in the rescuer power of technology did not actually exist even in those who chose it for the relationship with nature. They, too, had doubts about technical solutions and the idea that they should be developed much better. Neste's use of palm oil and unethical behavior in developing countries had made a bad name. One interviewee said that if you have ever heard or seen something bad from the documentary films, for example, it will remain surprisingly long and deep in your mind. In the same way, Nestle's infant formula packages had caused Nestle to continue to be the subject of a boycott by a few interviewees, even though these were already old events in terms of discerning the company's reputation. The importance of managing and keeping

companies' reputations clean therefore proved particularly important. It was hard to repair a reputation that had already been ruined.

Even without marketing, the consumers' mental categorization of products affects how a product is perceived and what interpretations are made of it. One interviewee, for example, analyzes that some beautiful yoga garment can be plausibly ecological, but Dolce & Cabbana attires cannot be that because it's a luxury product that includes a lot of extra items, packaging and marketing. The interviewee commented: "They can still have ecological material innovation, but the image is not eco-believable". Similarly, when a City SUV was usually interpreted as belonging to an unecological category, it was annoying to put an eco-label on it. It should be possible to change the category of a product first before it can be credibly labelled 'eco'.

Commercial selling of ecology did not go through well for the interviewees as communication, even though some promotional image ended up among the positive and impressive in the sorting task. What seems to be advertising or consumerism-fueled, such as decorating, was easily bad or at least contradictory when consuming in an environmentally responsible way. For example, the airport book exchange point was not understood as it was interpreted as an interior decoration shop or a beauty salon. The visual image created by the place marked it as a place of the consumer culture.

Among the respondents there was a lot of negative thinking against market forces and typical marketing. How do we market something that should take us away from the typical market-driven approach of consumer society? Can it be like traditional advertising anymore? The counter solution would be a counter-ad: You don't need this either! People would also like to know how the issue of environmental responsibility can be dealt with, other than by spending more. However, some respondents also confessed to liking advertising to certain limit. There was also such comment that internet exchange places such as Tori.fi and flea markets could be advertised more and efficiently. In particular, recycling was discussed in the sense that its various

points should be easy to find, and this also involves the need for more effective communication.

Suitable association chaining could clearly also have an impact on marketing purposes. The good treatment of animals is originally an ethical-moral matter that is not necessarily a central question of ecological significance. The mistreatment of animals was very impressive for the interviewees and also led many to think that meat consumption should be reduced and that farms where animals are mistreated are also bad. Ethical conditions also affect the manufacture of clothing, while at the same time making you think about the environmental impacts of immoral companies. Ethically questionable companies were not seen to be those that would act with environmental responsibility.

There is an interest in systems and transparency as one point in the need for information, even though it is a complex issue. Production chains and chains of operations are not clear and transparent to humans. For example, one of the interviewees explained about her own working life, how the shoe store's customers asked about the origin of the leather and about the production chain. In shoes, the producer had declared the origin of the material to the store, but customers were mostly interested in the manufacturing country and the humane ethics of the production. According to the interviewees, information on the products was not readily available. Things such as water consumption or energy consumption when producing products was not included to the things that the consumer is told. The production chain is unknown, and it would be important to uncover their systems.

> *"You can think with the products or services you buy, where their energy comes from". "This has to do with how much water is used, but it's not the kind of information that's usually readily available in consumer goods."*

It would be important to communicate about the concept of different systemic entities and the reason – consequence relationships in them. The overall picture of what people are saying reflects a very varied and differently weighted and fragmented understanding of things. The understanding of whole systems and their impact was flimsy. For the respondents the apartment building picture of the air conditioning equipment in each apartment installed separately, both concretized wild energy consumption and signaled a decentralized, personalized system instead of more sensible, energy-efficient and centralized system to meet the needs of air conditioning. This shows how it can be possible to communicate systems and their impact in concrete terms.

It was difficult to define even the concept of information. In interviews, the documentary films were called information. However, the respondents also wondered to what extent they were propaganda and, in some ways, focused on certain perspectives. However, the important result of the free final discussions in the interviews was the importance of documentaries. These were considered impressive because the documentary films brought problematic points to the "skin" and consciousness: they fulfilled story-based accounts, empathy, causes and consequences, and how something really affects in practice. In this sense, some respondent even admitted that emotions also make a difference when it is the documents that make a difference.

The issue "comes to the skin" when people experience empathy for people in different settings when watching human stories and natural phenomena in which animals appear as actors. Empathy and pity came out as positive emotional reactions. The discussions included many themes, which had obviously come up with documentaries. The program on the origin of food from Europe's small markets was impressive. The link between dolphin survival and the decline of tuna stocks was a concern. It was through documents that Bangladeshi sweat workshops, the health problems of stonewashing jeans for workers, the export of electronic waste to Africa

and its dismantling in unhealthy and polluting conditions had come to light. The living effects could be seen through documents somewhere else, and it was possible to present different impacts in the documents.

More information would be needed, for example chains of events and impacts should be better understood. Visions of the future are important. In fact, what will be the case in 30 to 50 years' time, if we continue in this way, also has to do with the required making abstract issues concrete. In the communication it is also important to put into concrete positive terms how much a small measure can achieve when executed systemically. What is Finland and what is has to do with what is happening elsewhere, causal relationships would also help to understand the need for behavioral change. Things outside Finland did not have much effect or interest. One interviewee said this aloud and this relationship was also evident with few other respondents. In this case, for example, poverty or pollution caused by Western consumption elsewhere does not seem personal and an appropriate comparison. Not everyone travels either. Those who travel experience the conditions of others harder, but the bad conditions elsewhere only make you think we're all right. Of course, traveling also has an environmental impact, so it is not a feasible solution for gaining understanding, although the specificity that was even used as a word was important.

Social media was mentioned either as a source of information or in discussions related to otherwise environmentally responsible consumption. The use of social media involved opportunities such as discussions about how influencing is important, if you do something, it can be shared easily. "Snowmen can be made by anyone and shared on Facebook". What information and thoughts were then shared on social media was both pushing positively and less for environmentally responsible solutions. "50% of the news stream that is tracked is social media, acquaintances send news links – watching it makes you worry even if the big changes don't happen until 100 years later."

However, social media and information disseminated online were also disapproved. Negative consumption-related phenomena were seen as the horror of marketing machinery. One interviewee wondered how clothes are sent free of charge to clothing bloggers and no one knows the background of these clothes. Their manufacturing chains remain hidden and blogs as one of the channels of influence are effective in marketing environmentally irresponsible products.

On the issue of wind turbines, groups had been set up to oppose the construction of wind turbines and disseminate information that their start-up and construction costs are higher in terms of carbon footprint and financially, than the energy output during the life of the plant. This was done in order to influence the rise in people's opposition to these solutions. On the other hand, the respondent comments also brought out how National technology research center (VTT) presented different results in its investigations. However, such a negative mentality spread by the social media, had spread from the general debate also to the understanding with part of the interviewees. This despite the fact that most of the interviewees put the image of the wind turbine on the pile of positive and impressive images. The transfer effect spread certain ideas also easily beyond the actual original target, such as the fact that the same doubts were expressed about the use of solar panels under the same stream of discussions. It was well demonstrated from the interviews that such knowledge-based views had really had an impact and made people think about, what is really a good solution and what was not. Information also without solid research spread effectively, affected and blurred respondents' understanding.

Social action and social framing as a route to environmental responsibility

A clear and strong area of impact in the decisions and activities of consumption was the social circle and social life of the interviewees. Man is a social animal in a significant way in terms of his habits of consumption. The family clearly mattered. If the kids got

excited, it convinced the parents. The parents, on the other hand, tried to guide and raise children. As a positive incentive, a few interviewees specifically described that they were thinking about their children's future, and how they should have the same nature opportunities or raw materials as us.

In particular, parents talked about how they would like to influence children's behavior by saving water or consuming water in general, or by buying only what is necessary. In some cases, parents reported being influenced by children, such as actively participating in one of the demonstrations or by example of vegetarian eating. When your own child does this, it is perceived as positive and not fanatical. Schools educated children and youngsters, and through young generations school information also spread to parents.

Social environments, such as the circle of friends, workplace, interaction especially through social media, influenced what people were inspired to do. In social media issues such as the actions or reputation of companies were monitored, and people picked up the challenges of friends. In the workplace people discussed topics of a certain week's documentary and they were inspired to take part in competitions or joint purchases.

Social activism involved 'awakening' people by various means, while everyday life was described as 'numbing hibernation'. The pursuit of awakening people was not only considered fanatical, but also partly good. It was good that people woke up from their hibernation and that there were people who wanted to wake others up. It was even considered possible to influence larger companies and organizations. Such a positive action included a boycott. Nestle's old mother's milk issue still contributed to the company being boycotted by a few older female interviewees because of unethicalness. So was also Unilever. In front of Neste Oils's advertisement, ideas referring to boycott were also considered, as the advertisement raised ideas about the use of palm oil and its multiple, especially human, consequences.

"I have stopped buying stonewashed jeans when I know under what circumstances they're made." "We get a lot of cheap clothes and people are treated outrageously".

Ethics as a social phenomenon was linked to environmental issues. People were connecting the good treatment of humans or animals to the insurance that the environment is also taken care of, that is to say, to the sustainable and ethically and morally good ways of acting. Green and sustainable consumption was practically both ecological and ethical for the interviewees, not different things, as some expert participants pondered. The horror of child labor and the sweat factories in Bangladesh were mentioned. This was then accompanied by the idea of polluting elsewhere in order to obtain a lot and cheaply ourselves.

Challenges and competitions were interesting ways to be involved in changing consumer behavior. One interviewee excitedly posted on Facebook about an everyday challenge spread by a friend. For a week, the friend had asked people to sort mixed waste, all plastics and cardboard separately and photograph them and share on Facebook that others would see how there is least mixed waste and plastic the most. The interviewee who told me about this said it was great how a friend had put this challenge on and quite a few people had joined in. According to him, the issue also provoked a lot of positively activating debate.

The competition at the workplace for measuring cycling or walking amounts really made you cycle or walk, for example. The cycling competition at the workplace was about doing things together and competing, which was easily accepted because of the social nature of the actions. People were affected by activities organized at work. It was said that there could be other social campaigns and "social fun".

In the workplace, social activities and discussions about interesting documentaries, for example, also influenced peoples' activities. The workplaces had also organized their

own activities by employees, such as joint purchases of organic meat. If the workplace or the teacher at school pushed obligations to such things as save electricity, this was perceived as a transfer possibility to increase the learning of a similar way of actions for private everyday life.

"Not every one of us has to own everything ourselves" type of statements were made by a few respondents, referring to business opportunities in sharing services and performance rather than the product as the offering. Respondents even disapproved of what others own, such as unnecessarily big cars. Joint ownership or a product as a service are possible in the minds of consumers when the action value is important not so much the product. Values such as mobility by car or health values in relation to cycling were included in the sharing discussions. The joint, cooperative and shared activities were described many times as desirable. The sense of community was a positive feeling produced by an activity like sharing. People also mentioned that they borrowed products such as cars from their relatives. There were activities around distribution of own products and, on the other hand, taking from friends, with products such as children's sports equipment, which quickly went small and unnecessary. From the book exchange point, some said that switching brings a sense of community. Things that were jointly or regionally owned therefore seemed possible in the minds of the respondents.

An interviewee told of a joint purchase of solar panels in a protected apartment building, which he himself had been promoting. Renewable energies were partly associated with the possibility of sharing and communal activities, although solar panels were often considered precisely through their individual situation and production possibilities, as well as through the saving possibilities for yourself. The sense of community also produced opportunities for saving and efficiency. The image of individual air conditioners of an apartment building raised the idea in many people of why a separate system has been made for each apartment, rather than something more efficient in common.

In energy production, the project was also an example for many of positive community action to produce heating. Making “woodwork for logs with a group of people" brought positive images to many respondents, especially men. It also brought to mind a lifestyle based on self-making, self-sufficiency and old-fashioned, close to the nature kind of living. It touched for that reason, too.

Communality and sharing emerged in connection with several pictures presented in the interview. There was even a question brought up of how to get people out of the selfish mindset that achieving one's own well-being and enjoyment is the main factor? Although discussions revealed an idea that a small person can't help anything, some thought that a million people could achieve a lot together. Such effects of influencing when doing together should also be concretized, as should other information that remains in the air, since results are otherwise difficult to understand.

The social field also included disapproval of others. In concrete terms, the photo of a SUV car provoked statements such as: "Big cars are just ego-ups" or "These kinds of cars are nonsense". The disapproving also involved watching for what others are doing. For example, there was disapproval of young people littering the streets. Someone at work puts down a running water tap when another person leaves the cold water on hold. It was found that other people at the waste point do not sort waste correctly and people even transferred waste from one container to another. When you sort the waste yourself, you would hope that others would do the same.

> *"You hear from friends, that biowaste smells. It doesn't really smell if you put a little newspaper on the bottom and take it out often enough".*

Disapproval is an interesting possibility for promoting people to activate others to behave or make their decisions more positive for the environment. Influencing decision-making moments could be about being a volunteer granny watcher by the

waste point. This does not mean that in interviews the disapproving persons were only older women. With young men, you could also find reproachful respondents.

Disapproval was also directed to distant destinations such as the growing consumption of Asia. It not only provoked comments that we cannot do anything about this in the face of the disastrous consumption of Asians, especially the Chinese, but also reflected on different perspectives. A picture of a dirty and worn-out floor prompted comment: "In poor conditions, you cannot afford to choose what to do". This could lead to a conclusion on how the interviewee thought about how well we have motivation and choice. Such ideas also included what kind of example we are setting for others, such as the by the interviewees scolded Asians.

The discussions highlighted groups of people perceived as different types of players: fanatical, big business boycotters who engage in demonstrations, and then normal, busy, lazy and indifferent. Even those who based on the interview could be categorized as indifferent did some things, such as fishing, berry picking or mushrooming, if your own social circle did it and felt it normal. People then wanted to or did not want to be identified with certain types in varying degrees through their own opinions or actions. The word normal was very much used to describe what usable environmentally responsible solutions should be. They should be normal both as solutions and in terms of availability compared to current consumption.

It was also important in ecological matters that when buying and using, the end result is beautiful and pleasant. The comments raised hopes that waste tanks, solar panels, air source heat pumps and goods could be good-looking, even though they were produced with the aim of environmental impact. Eco-products were said to be grey and not attractive. Organic food was described as dried. Eco-clothing could be bought, but it should be the same style as others and not like " bag resembling hippie clothes". However, there was clearly a contradiction in the fact that the products had to be both pleasant and you should also be able to categorize them as an eco-, organic or

local product and not as a fast throw away fashion product in the consumer world.

The requirement of normality is also emphasized through the experience of pleasantness, as normality is also associated with experiencing pleasant, which is easily perceived as a positive and foreign and unclear negative. A foreign feel required such things as going outside of your comfort zone and maybe missing the approval of your close friends. The need for a sense of normality was strongly highlighted in the interviews.

> *"It cannot feed you with anything strange or fanatical but must feel ordinary".*

In the face of large and unordinary measures, the consumer was easily branded political because they required action against the typical structures of society. This is accompanied by the undertone that deep social structures should be changed. Consumption is only a surface phenomenon, and its individual actions are not enough or are 'political' against public perceptions and systems as long as background thinking and the systems created on top of it do not provide easy, natural and normal action. Actions have to be normal to run the everyday life in the current circumstances.

The interviewee, who lived in an eco-house on an eco-housing area, explained how the original residents were an active top group, so the eco-issue was commonplace there. The area was organized in such a way that people can be ecological and those who want to live like that have moved there. The housing system had later ‘normalized’ a little, as less eco conscious people had moved in. However, it seemed natural to be ecological yourself when people like it live in the environment. This report was accompanied by the fact that ecological status can become normal under the right conditions and precisely through its community acceptance as normal. In practical terms such tools as social media facilitated ecological activities when things were disseminated and shared in the Facebook group in the eco-area.

11

User-driven green solutions as a service process and touchpoints

Based on the above analyses, it is possible to present a collection of useful contact points for environmentally responsible solutions. These include interests, communication methods, forms of enabling operations and social activities that can be used to design parts of environmentally responsible solutions. These may be related to the attractiveness of the solution, communication, branding, marketing, distribution channels, active solutions or feedback on usage. In the light of the previous design and consumption research and the Finnish interview material accounted in this publication the presented themes and contents are suitable contact points for consumers when designing environmentally responsible products and services and their marketing. The research furthermore involves a broader perspective on enabling, which is to provide environmentally responsible solutions as a customer journey that suit consumers' everyday lives. Solutions should therefore be developed through comprehensive and consumer-oriented customer journeys in terms of consumers' life situations and contextual conditions.

Certain parts and directions of solutions seem promising to support consumers' activities and lifestyle changes in a more environmentally friendly direction. The participants themselves suggested a number of issues and, in the light of the interview study presented here and the issues raised in previous studies, it is possible to propose certain ways of communication and issues that could support consumers in taking environmentally friendly consumption into account and in practice also in the choices and activities of the real life.

The interviewees had a lot of different views and suggestions about things that would affect and facilitate greener consumption and the running of environmentally responsible everyday life. In this respect, it was not only an interview on the basis of which the study draws conclusions, but also a crowdsourcing project in which 76 people gave their opinions on what would affect them. The respondents came up with ideas either on the basis of an existing phenomenon or more independently on

the basis of communication and activities that, in their opinion, would activate people to act greener. Many of these issues have already been dismantled in the previous chapters, because the answer was often a phenomenon that had been perceived to be impressive for one's own circles rather than brainstorming new solutions. The outcome of effective measures includes not only meta-analyses of the previous studies and the possibilities for solutions emerging from the analysis of the material in the interview study presented in this publication, but also the exact effective means that the interviewees themselves expressed.

Since environmental performance issues are often not at the top of consumers' minds, we need to consider how they are to be associated with the added value of either products and services, in which case their fundamental value must be in relation to the needs and desires of consumers. Eco-issues can be added to a longer chain of influence, through an area of interest that is important to consumers: food, health, well-being, nostalgia, stressless living, mobility in the nature, animal welfare, durable products, saving and concrete recycling. Since entering through these motivation issues could be the first step to arouse interest, this touchpoint field is highlighted as the first driver area to consider in the Figure 12 below.

Another part is the dissemination of information in such ways that it is clear, credible and understandable. The information should be clearly visible to the customer in such a way that it makes it easier to make a good choice. Concreteness is evidently important. Negative intimidation is impressive, but it should be combined with concrete guidelines on what you can do yourself. Positive is pleasing, but it must also be understandable in the sense of what it actually means or directs to do. Impressive and touching communication can be both negative and positive. Comprehensibility is improved by an easy-to-understand concreteness and possible comparability to something familiar. This information should also be transparent and reliable, as credibility in particular is a major challenge in the midst of an excessive and

contradictory flood of information. People's understanding was also fragmented. A systemic perspective is difficult in the field of information, but it is also necessary in this respect. It would also be important to help people to understand the big chains of influence, the relationship between different influence factors and peoples' own involvement in these systems.

Thirdly, the important driver is the ease of actual activities, including the ease of discovery and the help and support for action and clear visibility of the results. Small everyday acts that are easy to do, such as recycling, bicycling and cooking from genuine raw materials, were easy places to start environmentally conscious activities. Small acts can gradually increase to changes of lifestyle. Understanding and learning had the potential for transfer effect. The solutions should be easily available in a convenience store, because even the price may not have as much effect as if the solution is easily accessible and possible. This involves building both small and wider solutions so that they offer service, are accessible and can be easily used. The activities should help achieve tangible, meaningful results and eliminate guilt. The invisible achievement of environmental performance must be made visible in some way so that it rewards. The activities may also involve concrete rewards, although it should be remembered that the motivation generated by the rewards is external and can easily subside when the reward is taken away gradually or before the activities have changed to habits. Guiding infrastructure and guiding regulations and subsidies are also important because they actually have a significant impact not only on the ease of doing things, but also on the experience of normality.

The fourth field of drivers relates to the possibilities of social impact and interaction to support environmentally responsible choices, communication and activities. Sharing, communality, influencing, activities, challenges, competitions and working together in your own social, family, friends, residential area and workplace or education are important issues affecting normality and activation. Social responses are also

rewards or support for certain types of choices and behaviors. Social unity also brings happiness and satisfaction. Even the willingness to activate others was evident from the respondents' reports and activities. This should also be made more useful because messages from peers or loved ones were more reliable and inviting than the general media or some foreign source.

The experience of doing things that is accepted by others and feels normal is essential. It is listed as a factor in the possibilities of sociality, but often arises from issues related to three other ways of interacting, such as concreteness, discoverability and

Figure 12. Analysis that presents drivers important to user-driven green solutions (Figure Kälviäinen, 2019).

accessibility, ease of everyday life, or through largely commonly built infrastructure and rules. It also arises through a comprehensive customer journey that is presented after the analysis of the drivers and operating points and is linked to the normal course of activities in everyday life. The contextuality prevents the solution from feeling contradictory in relation to running a normal and accepted everyday life. All the factors that reinforce normality also confirm that solutions do not get the stigma of fanatical or hippie life.

When these results are considered in the light of the formulation of a change in sustainable behavior or, on the other hand, the study of green consumption both of these research areas are present. Micro-product-based design refers to usability as a basic thing, easy learning, commissioning and use, and visible results. As far as product information is concerned, it refers to clear and concrete advice or pathways of action on what to do with the product. Since product-centric design for behavior change has specifically looked at how to reduce environmental impacts in the use of existing products, this trend also produces a sense of normality for users. By using fewer resources, such as energy or water, they also provide opportunities for savings. In the product-based thinking of the circular economy, strategies that extend the life span of products in their use are also taken into account and the potential for reuses is important.

When considering the general guidelines for the psychology of behavior and influence presented by Honkanen (2016), they show a great deal of similarity in influencing decision-making moments and processes. In the presented interview study of influencing ecological consumption, the results are comparable to those produced by Sitra's SHIFT meta-analysis including social impact, formation of habits, individual self, emotions and cognition and concreteness (White & Habib, 2018, 9). However, the mappings produced by qualitative user research, highlight not only the approaches found on the basis of meta-analysis, but also the specific issues through which users could be influenced in real solutions.

Solutions at the level of product service systems analyze consumers' service paths, their contact points, taking into account different ways of finding information and achieving solutions. They also take advantage of interactions related to social sharing. Some service-type solutions are already taking place now around consumer interests such as food districts for growing vegetables in accordance with healthy and organic food and even self-sufficiency, or city bikes related to health and mobility. In particular, recycling-type of solutions involving social sharing have been on the rise, both as concrete trading and sharing places or days and as digital platform solutions.

It is also possible to analyze the materials of the interview study from a more holistic perspective. Conversations with consumer respondents revealed a certain model or story of everyday life formed by things that prevent green consumption. The model resembles a customer journey related to service design, where the customer journey often seemed to work unsuccessfully. The need for solutions such as the customer journey is accompanied by the idea in the analysis results of the interviews that solutions for an environmentally efficient lifestyle should be linked to normal life. They should be accessible in the context of use in those moments when the consumer normally needs them. Their use and final stages should adapt to the multi-requirement constellations of everyday life.

It is not enough to find solutions to simple, individual decision-making moments. Users' broader lifestyle, life contexts and longer operating processes in everyday situations are important and also provide content in the general guidelines produced by behavioral psychology that are applicable at decision-making times. This is also recalled in shift material (White & Habib, 2018). However, SHIFT material does not provide guidance on how to build a consumer journey type of solution. The psychology of behavioral change and also service design thinking refer to process-based schemas, scripts and mental models in the design and implementation of activities (Honkanen, 2016, 55-59).
The service design involves the idea of a real customer journey built from the

customer's point of view and the related contact points where the interaction that takes the service process forward happens. In addition, the service examines physical elements and the service environment. The customer journey includes both the phase before the actual core service, where the customer finds the service and is able to access it, as well as the stage after the core service, which can mean a wide range of activities carrying even in mind the possibilities of peer-to-peer marketing (Stickdorn et al., 2017, 44-53). All these means of service design are clearly important when designing environmentally responsible solutions. Finding and accessing can also mean opportunities for end-to-end peer marketing or information obtained through interests. In many environmentally responsible solutions, the functions that take place after the customer's actual use are also important. These can include easy sharing and borrowing, recycling, repair, or peer-to-peer activation and marketing. At the end of the day, the importance is emphasized in the fact that socially spreading peer-to-peer marketing is both credible and, in this issue of an environmentally responsible lifestyle, it is particularly important in order to achieve the goal of social acceptability, normality.

In the respondents' reports, the obstacles of environmentally efficient activities occurred especially in the initial phase of the customer journey, which often takes place before the actual use of the product or service. This could be described as a stage of awareness, discovery and accessibility when it is targeted at environmentally responsible solutions. An important issue in bridging the gap between attitudes and real action seems to be in the opportunities offered and in credible information. It is possible to draw the conclusion from the user stories told by the interviewees that the problem is finding information about the existence of green solutions, the availability and accessibility of solutions in the midst of normal, busy everyday life. This challenge will not be met simply by thinking about the individual, separate decision-making situation and the availability in them, as suggested by some design guidelines and behavioral economics. Different contact, interaction and decision-making points

should be chained into multilevel combinations suitable for everyday operating processes and contexts connected to consumers' life situations.

The solutions and their settings can be placed in the context of action in which people move and make decisions in their daily lives: in certain places, at a certain time and in certain social circles. In practice, this may mean that information is available from workplaces, interest-related programs and advice, hobby circles, or is available and discoverable from the service provider under titles and associations that are normal for consumers or genuinely interesting to consumers. The solutions should be accessible and available in the supermarket at 5.30 p.m. when the parent is doing family grocery shopping or is on the way to pick the children from their hobbies. The service could also be offered on the customer doorstep. It should be possible for a consumer to make environmentally positive operational decisions at the same time as managing other requirements of busy, everyday life.

First-stage interest can happen at another moment connected to those interests or social network that are important to a particular consumer. This includes, as a first step, attracting interest and providing easily accessible, reliable and transparent information, which also provides information on how these green choices and activities deliver real impact. Awareness and knowledge must also be accompanied by easy information about availability. Availability and access include the necessary activities that people need to take, that they can find and access green solutions combined with places you would visit anyway, or that the information is linked to the interests you otherwise follow. The use of time and perseverance required from the consumer appeared to be a more important obstacle than money. Connecting normal life with its important social networks and interests also reinforces the central factor that solutions feel normal.

Different consumer journey performance sections refer to similar means proposed by the framework for formulating a change in sustainable consumption. Product-centric solutions have been accompanied by analysis of verbal or visual information,

guidance or other support, access to low-impact use, feedback, rewards for good practice and penalties for poor ones, limiting choices through default selections or even by a low-impact script to guide operations. (Bhamra et al. 2011; Selvefors et al. 2011). A map of several motivational factors has also been presented on the use of product solutions as possible for environmentally efficient products to attract consumers to use them. These methods include information from the point of view of general communication, feedback in which the data mirrors the user's operations, enabling easy operation, encouraging the user on what to do, advising on recommended

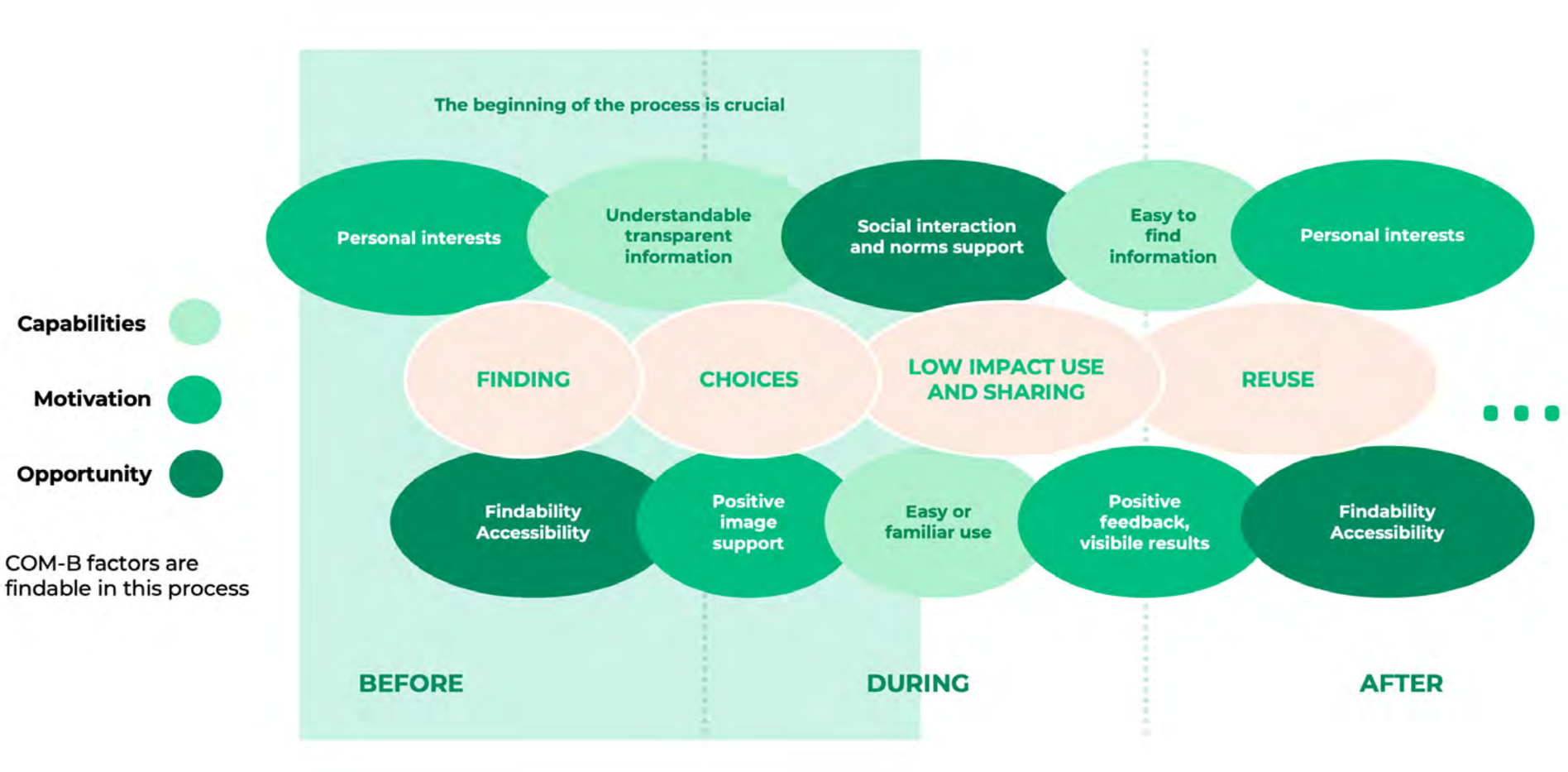


Figure 13. Analysis of contact points and solution parts related to customer journey that supports the change in consumption in an ecologically sustainable direction (Figure Kälviäinen, 2019).

Pay attention to the target group specific interests and design motivating and understandable communication

Make the solutions easily findable and accssible in the middle of the busy everyday activities

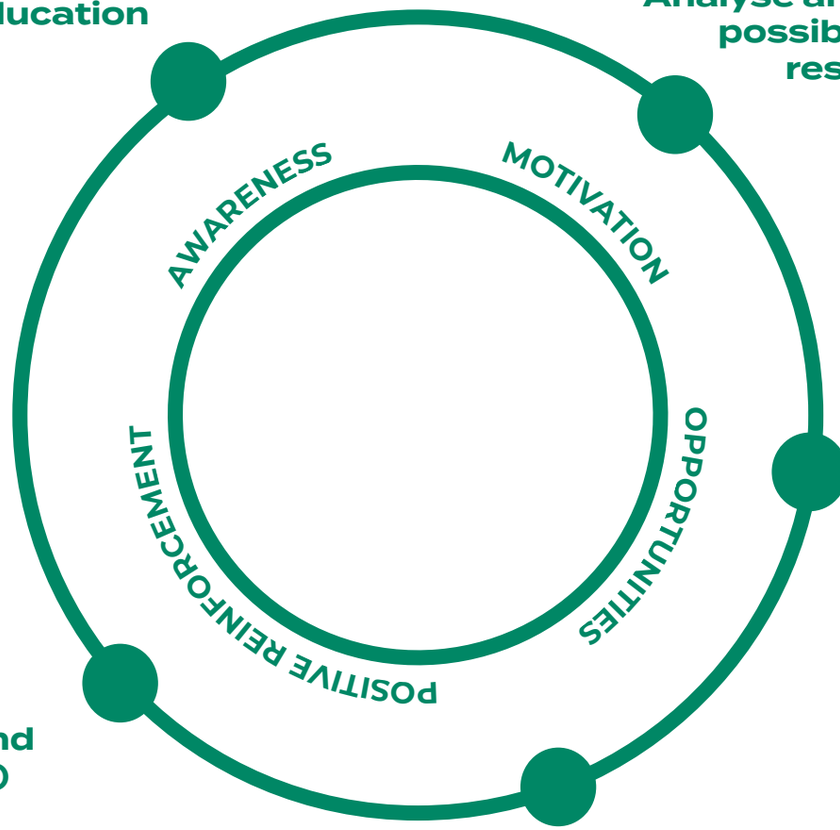
Awareness

Target group specific communication, information, education

Despair

Analyse and anticipate all possible negative responses

The emphasis on urgency is impressive and negative messages can wake you up



Show examples of the results and present comparable informations connected to familiar and concrete issues

The solutions are adaptable to achive individual, positive life aspirations (e.g. health)

Design

Enabling solutions to try new more sustainable behavior

Celebrate

Positive feedback and rewards (long term)

Make the solutions easy to use, quick, normal, social and enjoyable with concretely observable results

Produce feelings of achivement about the aspirations and results and feed social interactions, enthusiasm, acceptability, saving and rewards connected to interests points

Change

Support implementation In real life

Figure 14. Findings from Finnish user research mirrored in the A2D2C behavioral change model (A2D2C model Tischner & Stebbing 2015, 320-326).

practices, guidance and hints in the direction of best practice, coercion or also automation to ensure secure environmentally efficient operation. (Shu et al. 2017, 645).

The previous model of design research, which is close to the service design consumer journey type of a process, is the A2D2C presented by Tischner and Stepping (2015). By this process a behavioral change related to environmentally efficient consumption can be supported. In the figure 13 describes consumer journey with the same process solution parts that Tischner and Stebbing (2015, 320-326) present in their AD2C2 model to support the change in consumption in a sustainable direction: awareness, getting over despair, learning the suitable habit, transforming and celebrating new activities. In fact, the Finnish user interviews open up the issues presented in the AD2C2 model in detail through the light of user information and understanding found through interviews. The A2D2C model can be supplemented with the interview findings.

The existence of a gap between attitudes and behavior is evident, despite the direction that show environmentally responsible values. The reasons for this gap may also be concretized in the light of the research results presented. In general terms, the first stage of the adjustment of attitudes has already succeeded in the direction of the first stages of awareness presented both by the A2D2C model and the models of health promotion change. However, this is not enough to change complex everyday situations or help consumers to take more specific and concrete change measures in the midst of everyday requirements. Everyday situations affecting operating methods are also something other than the core development of a single product or service. They are broad entities influenced by people's life situations, occupations, forms of housing and other factors in everyday lifestyles. In many respects broad everyday infrastructure and frameworks still support environmentally wasting and emission-generating consumption, and not environmentally responsible activities.

The qualitative user study in this publication demonstrates how the setting of a number of previous studies is not precisely a situational tie-up for consumers' lifestyles

and everyday life, but it is thought that the decision-making guidance on the use of products is sufficient. The product-based, one-off solutions do not consider the operational and cultural situations of everyday life in which the actualizations of a particular activity in the framework of consumers' lives are located and what factors other than the very basic functions of that particular activity affect how the consumer operates. It is important also to ask what are the pressures associated with that situation? Such a situational link seemed very evident in the consumption reports gathered from the consumer interviewees in the study of this publication.

The consumer situations and operating processes with multiple demands, as well as the consumer passions, goals and lifestyle choices, can be productized into offerings that include both the drivers that inspire the consumers and the contact points that support them in the change process, as also presented by Bridgeable consultancy (2018, 11-22) in a material linking the service design and behavioral economy advice together. Service designers are responsible for reviewing and developing the experience of the whole process. The guidelines for behavioral economics and tutoring easily optimize only a single decision. However, individual decision-making moments or contact points and appropriate intervention moments should be brainstormed in such a way that the overall process is fit. Both the process and these current means of action should also be prototyped and tested. Are they really appropriate and effective in a specific context? Is the designed overall process and the ways of supporting people to change really the ones that work in the midst of practical everyday life?

12

Green Design Advice Cards

Previous research into design and psychology aimed at behavioral change that reduces environmental impacts has highlighted guidelines for design often in the form of instructional, idea or suggestion cards. Based on the analysis of the qualitative user interviews in this publication another guidance material has been created here to support designers in making user-oriented, environmentally efficient solutions. Based on previous research and accounted empirical user research, a list of guidelines has been prepared, which can be used as idea cards in addition to building the service process and supporting contact points in developing different solutions. The guidelines are also a natural way of taking results into practice, as the interview study did not focus on research into changing the use of any specific target but sought to find out in general terms what kind of things would push and support the consumer to change their behavior in the green direction and which would hinder them. The instructions include separate themes from important areas of influence or opportunity, so it is also possible to print them as cards that can be used during the design process. If products are designed in the light of these guidelines, the guidelines also serve as a reminder that the wider consumer's usage situation is useful initial information if you really want to influence behavioral change. The purpose of the guidelines is to provide design advice to diverse designers and communication designers on how to design green products, services and their communication in such a way that the solutions would actually motivate the consumer and enable consumers to find and use them.

The guidance includes the following themes and related design issues:

- **Bring personal meanings and value to the solution.**
  Consumers are not mainly interested in saving the global environment. It is too big for most people. A more personal and specific theme can motivate them better: Is this healthy for me and my family? Does this bring welfare to animals? Can I both save money and nature by using this? Does this allow for social interaction? Does this offer relaxation and nostalgia? Does this have anything to do with my outdoor activities?

- **Making abstract benefits and disadvantages tangible.**
  It is not easy for the consumer to imagine abstract and distant benefits and disadvantages associated with the choices they consume. These consequences must be made concrete and visible: Show in concrete terms how nature is preserved thanks to certain choices. Show in concrete terms what the negative consequences for nature will be if we do not make environmentally responsible choices. Clearly display the long-term results related to personal savings and offers small rewards at the ongoing moment. Give concrete account to how savings might be repeated over time or thanks to the combined actions of several people.

- **Provide understandable and comparable information.**
  The information available on ecological choices is confusing, contradictory, and clear advice is difficult to find. Consumers want sensible, transparent and comparable information about ecological consumption habits and options: Show in a transparent and simple way, what exact issues makes some activity ecological. Reveal broader impacts, complex influences and inter-business relationships in a simple way. Avoid too obvious a style that suggests greenwashing, but also visually show that this option is nature-saving compared to many other options on the market. It is easiest to understand the meaning of numbers if they can be compared to a familiar phenomenon or activity.

✔ **Making environmentally sustainable solutions normal.**

Most consumers are afraid of solutions that are not 'normal' and which separate them from their social groups. Ecologically sustainable solutions should be made acceptable in terms of the ways to use them and in social sense: Make them look normal. Make them feel normal, not fanatical. Make them suitable for already existing habits and easy to fit into busy everyday life. Make them the same price or cheaper than less ecological solutions. Entice ordinary people to set an example of using a solution, make it socially possible, and challenge others in different ways to similar changes.

✔ **Make environmentally sustainable solutions easy to find and use.**

Consumers are often busy and overloaded with their normal everyday chores. They can't spend much time looking for, exploring and traveling after ecological options: Offer environmentally sustainable solutions in places where and at times when people are already moving. Make ecological solutions clearly visible, easy to find and use. Show the benefits of ecological solutions in simple, easy-to-see and understand ways.

✔ **Make environmentally sustainable solutions pleasant and enjoyable.**

Consumers see many positive aspects in ecologically focused consumption choices and even in less consumption. These can be highlighted in the context of environmentally sustainable solutions: Many consumers are interested in healthy food and animal welfare. Many consumers are tired of the busy lifestyle and appreciate nostalgic, slower lives and opportunities to relax. Many consumers would like rewarding opportunities for social activities, such as competitions and games, rather than more goods. Many consumers feel guilty and would find it pleasing if they can ease this guilt with some concrete and rewarding green activities.

✔ **Make environmental threats visible, and then offer practical opportunities for action.**

Consumers have fears and they feel guilty. They also easily feel that the individual is unable to do anything: Help consumers play a more active role in protecting the environment. Make environmental threats concrete by clearly showing what kind of environmental disasters can be expected when the threats shown by the studies are true. Always combine with the concreteness of threats, a provision of practical, concrete and easy ways to initiate a lifestyle change to prevent these threats from happening.

✔ **Help consumers by providing infrastructure and regulation that support sustainable choices.**

Consumers acknowledge that busy everyday life and its many other requirements prevent them from considering the environmental impact of their consumption choices. Consumers want to be guided or helped to make sustainable choices through infrastructure and regulations: Make environmentally sustainable solutions clearly visible, easy to find and use. Offer opportunities and easy usability as environmentally friendly energy, heating, mobility, food and product solutions. Show where and how it is possible to share and recycle and keep these places the same for a long time. Support public sector regulations and subsidies that direct consumers to consume in an environmentally responsible way.

This list of design advice and the issues contained here have been built through a previously presented consumer study, and they continue to describe the content that emerges from real user data as an aid to user-driven design of environmentally conscious solutions. In addition to producing completely new solutions, the guidelines can also be used through questions as criteria for assessing existing and already in use solutions.

13

Application of the theory and findings as user-driven solutions

Pressure is pushed on the consumer on how climate change requires them to start changing their consumption habits. Consumers are also offered specific advice on how to change consumption (e.g. Sitra, 2017). It is important, however, to consider, if the services that the consumer needs in practice for this change are lacking?

This chapter highlights some examples of products, services and systems already on the market or under development that, in the light of the research results presented in the first part of this publication, successfully serve, facilitate and support consumers in the required change. In addition, this chapter highlights the acquisition and consumption of environmentally responsible food as an example of how research into environmentally responsible consumption could be put into practice in service terms. Information, food related instructions and services have been taken as an example of an important area of consumption. The alternative solutions for supporting food consumption change are based on user-driven development and have been considered through the studies presented above.

The examples of the behavior change solutions are not based on a scientific environmental impact assessment of the solutions presented, but are examples that represent both solutions for important areas of impact of environmentally efficient consumption and are built in such a way as to provide solutions to consumers' everyday lives in an easy-to-use manner. The examples also include choices from the winning small companies in Sitra's Smart Everyday competition in 2018, which facilitate the change in consumption by providing joint product use, renting and car-pooling services, use waste food, or information on the origin of the products. The competition also involved the possibility of cooperating with large companies on the jury, which of course strengthens the effectiveness of the solutions. (Autere, 2018)

Housing:

In the housing series, the solutions of Sitra's Smart Everyday competition awarded energy efficiency consulting provided by Green Coal Mining Oy. The aim of the company is to build a systematic package for the customer to reduce energy and water consumption in a responsible way. This is done by means such as monitoring new innovations entering the market that are applied to the customers' needs and provide them cost savings. Of course, all the individual energy-efficient and water-saving solutions that already exist, as well as the possibilities for purchasing energy or heat produced in an environmentally efficient way, are part of the solutions for the change in housing consumption. In addition, design for behavior change has specifically sought to produce energy and water use solutions that would help the consumer to use these resources in a way that conserves them.

Both separate companies and electricity companies have produced solutions to the potential of solar energy production, understanding the difficult route for the private consumer to understand the purchase, suitability, costs, cost distribution, revenues and installation processes of the solar panels. The solutions offer house-specific opportunities to model solutions directly on the roof of your own house with Google maps-based solutions. In this case, it is also possible to make calculations according to the modelling that directly show the consumer what quantities of panels can be used and needed, what they cost and what period, taking into account their energy output, would be required to recover the costs. Of course, the calculations offered by individual companies do not calculate comparisons with those of another company, so it is still up to the consumer to make such comparisons or compare technology solutions. Since one obstacle is the high price of a one-off investment, there are also different payment system solutions for this. Typically, the same companies also provide installations and a service related to system deploy.

Mobility:

At the top of Sitra's competition in the mobility series was App2Day by Tecinspire Oy, a calendar app that facilitates the organization of carpooling by helping to agree on carpools. Share it Blox Car, a peer-to-peer car rental service, was also top-ranked. One important aspect of mobility sharing solutions is that the use of cars over time is often very inefficient. One example of this is the Finnish Autonappi application, the business idea of which is based on the under-utilization of company leasing cars. Using GPS positioning, the service works with the technology installed in the car, which allows those who need a car to book a shared car for themselves. The service reduces companies' motoring costs, promotes resource wisdom and reduces environmental burdens.

The introduction of Mobility as a Service (MaaS) solutions is promising in mobility. These services offer different modes of travel by combining different transport services so that it is easy for the user to achieve the goal they need. Consumers' problem with the difficult and complex search for information between different means of transport and the many tickets purchased for different services is unnecessary and the purpose of the service is to enable easy avoidance of private cars. Of course, MaaS services are unable to tackle the difficulty of having to carry luggage by a person moving without a private car from one means of transport to another, to walk different distances between means of transport, dragging luggage or waiting for the next shift.

As far as mobility is concerned, cycling and walking, and enabling them through good infrastructure and safety, are important ways of reducing the load. Many cities have been active in this and city bike systems are also becoming more common. In addition, more attention has been paid to the safe storage of bikes, for example at stations. The increasing supply of various e-bikes and wheel-connected transport equipment is also part of the service offering related to these functions.

As far as mobility is concerned, it is also interesting to pay attention to avoiding mobility and solutions that allow the necessary social interactions and the acquisition

of experience without travel. These include various virtual meeting services, e-learning environments or enabling virtual travel. However, in the context of digitalization, the development of services is important in order to be as user-friendly as possible and to allow important social or other experiences to be enjoyed as well as possible. What is interesting is how virtual tourism could also be associated with human activities and elements. The critical point in such virtual solutions is that they would not produce a significant amount of environmental burdens at the end of the game, as for example, the need for energy use and various equipment increases.

Food:

From the food series in the Sitra's Smart Everyday Life to the top raised a development program by the Järki Särki Ldt. canned fish and the street food company Idealgrain Ldt., which uses the ingredients from the production of the brewing industry. Loop, the waste food restaurant in the winners, is aiming to reduce food waste and promotes the circular economy. Food-related solutions, which already exist, will be followed further in the future sub-chapters of this publication as we focus more closely on proposals for solutions for environmentally efficient food use.

Products:

From the Goods and Services series, the CosmEthics mobile app came out on top in Sitra's competition. The app tells you the ingredients cosmetics contain based on the barcodes of the products and helps also to avoid microplastics. In addition, a mobile service that increases the transparency of companies' working conditions, was admitted to the development program. It explains the working conditions under which companies' products are manufactured and helps consumers choose products made with respect for human rights. In order to increase the intensive use of goods, the Goodrnt application enables flexible rental of goods, and Jaaxx Oy's goods sharing service Liiteri.net. These two had also success in the competition.

Of course, services that increase recycling specifically for reuse have successfully increased, such as the use Tori.fi or several regional Facebook recycling groups. In these, consumers do peer-to-peer business or often also distribute their unused products for free. More extensive phenomena include the consumers own sales activating Cleaning Day movement or business-based recycling stores both online and in local business premises. Recycling trade is also partly characterized by ethical good if they are activities run by a charitable association or aimed at employing the unemployed.

In particular, on the furniture industry and trade side, business solutions have emerged that furniture companies will take back products that have already been used for further sale or further processing, such as Artek second cycle, Isku recycling solutions or take back services by smaller operators. From the consumer's point of view, the ease of this depends on how easy it is for both as journeys and activities to return items and what the compensation for returning is. If it also requires the purchase of a new product, such an activity does not reduce the quantity of goods. Also interesting is the mantra that Vepsäläinen has been presenting for a long time, how they sell partners for life as the company refers to the provision of the product for a particularly long service life.

An interesting effect in purchasing behavior has been the environmental price of small bags since the cost of small plastic bags in some shops has become concrete. Such concretization and price-related change of normality have had a major impact. Consumers have really reduced the use of small bags. The various product development decisions of industrial companies have also reduced packaging materials, or the companies have changed their packaging material composition to solutions that reduce the effects of consumption or allow recycling and reuse. As far as the consumer is concerned, learning about these solutions means that shoppers remember to carry suitable bags where purchases can be put without any smaller bags.

In the case of goods, the different possibilities of dematerialization are also

interesting if the necessary function is arranged as a service. Many digital products can replace concrete products such as e-books and audiobooks.

Food consumption as an example

As an example of how to start building services for changing consumer behavior, food-related choices and the use of food is reviewed in this publication. According to Salo and Nissinen (2017, 18), food accounted for 16% of the load caused by everyday consumption in Finland during the 2010 survey period. Food-related solutions have been chosen here as an example for clarity. The solutions of the high impact are so diverse that they are more difficult to present in the form of a general service path and development ideas, and on the other hand, much attention has already been paid to mobility solutions. Mobility as a Service (MaaS) service solutions combining different mobility equipment schedules and payment systems have been introduced to the market, and many cities have promoted solutions related to cycling, for example.

According to the user study, the selection, purchase and use of food and food products is considered as a service journey in line with the findings presented in this publication. The journey starts by attracting interest through consumers' own interests and situational places and times. After that, it is important to look at easy discoverability and access to information. Positive perceptions and social acceptability support making the right choices. Positive feedback is important when you have decided to make the right choices. Easy use and allocation of the amount of waste and recycling of waste material are also important steps that will come after actual use.

The study has revealed different groups of consumers in relation to sustainable consumption. The solutions presented here specifically look at the possibilities of solutions from the perspective of a consumer who is not particularly motivated and energetic in implementing ecological perspectives in everyday choices and activities. This 'laziness' in terms of choices and activities described by the respondents

themselves was very typical in the light of the user study. User results also highlight the lack of services related to environmentally efficient activities and the lack of existing services and infrastructure to support environmental efficiency rather than inefficiency.

The publication's design research and chapters about consumer research have also presented different stages of the path to change consumer behavior and different categories of consumers that can be attracted by different motives and practices. These will not be dealt with separately in the next proposed solutions, but the suggested solutions will include options that could also attract reflective, systematic and environmentally interested consumers with internal motivation. It is worth noting that even such consumers lack practical solutions and service options to implement sustainable consumption. However, there are also alternatives to attracting consumers whose motivation is related to health, status, sociality, saving or nostalgia, and purchasing behavior is based on enjoying spontaneous shopping, for example in the form of impulse purchases. Different stimuli and starting points, as well as steering and pushing for change by location of operations, are needed alongside broader solutions. In any case, solutions must work in the midst of everyday haste, and solutions should not give any consumer group the impression that environmentally efficient everyday food is difficult or slow to source and prepare. All activities also have an important element of ability and learning, in which case the solutions offered should dilute the feelings of confusion and conflict of information that are already associated with food knowledge provided by the media and other channels at a more general level.

The information and service path needed by consumers must relate at least to the following stages: attracting interest, finding the solution, accessibility, availability, skills in acquiring, transport, social support and competitions, normality, rewards, knowledge of use, easy use, avoidance of waste or sharing and recycling. Providing all these steps also supports increasing the environmental performance of food use and this becoming a habit.

This idea, which presents the different stages of the service path, does not take a detailed position on which foods are environmentally efficient. There are different counters for that. The Finnish Environment Agency has published a guide on consumer choices encouraging environmentally efficient food selection and use with the following guidelines, which include consideration of food quality and reduction of waste:

- **Buy local food, use seasonal food, use less meat (especially red meat), use fewer dairy products (especially hard cheeses that have been ripened for a long time)**
- **Favour local vegetables, beans, lentins, soy and fish produced with renewable energy from sustainable sources**
- **Just buy the necessary amount of food**
- **Avoid waste by using food with expiring dates in time and use left-overs**
- **Take advantage of the offers of food that is getting old in shops and restaurants' left-over food**

(Salo & Nissinen, 2017, 19).

The general principle is that a plant diet is less environmentally burdensome than a meat-rich diet, but here too, it must be kept in mind that some vegetables are not so environmentally conscious, and some meat products burden the environment much

less than others. Some dairy products also cause environmental loads even above meat products. All this makes the education on food very complex and difficult for consumers. It is precisely for this reason that it is important to try to help consumers by various means in this difficult but necessary task.

The formulation of the change in consumption has presented certain functions as particularly important and, in order of influence, the most important impact in terms of food products would be to reduce meat consumption, followed by a reduction in household waste, which is already up to a third of the amount of food purchased. There are also minor effects of the switch to local food purchases and, as a small measure, the reduction of packaging waste. The possibilities of the design are to increase knowledge with food packaging labels related to carbon footprint or nutrition, suitable size changes to food packaging and to make it easier to buy healthy food by making it available nearby, such as from an easy place in a supermarket. (Clune & Lockton 2018, 167-171). The purchase, manufacture and utilization of food also involve transport, the challenges of packaging and the reuse of packaging or various recycling solutions, as well as the manufacture and storage of food. However, the range of solutions presented in this publication focuses only, by way of example, on issues relating to the purchase and use of food.

Like many other aspects of environmentally sustainable consumption, different areas and their systems are always intertwined. This makes sustainable spending issues and solving them complex challenges. A fine example of the combination of different operating systems was the idea developed by Austrian students in a workshop using the material presented in this publication to combine a typical train commuting in Austria with an eco-food store at a train station, remote ordering and zero-emission, borrowable means of transport in the shop. In the solution, workplace mobility by public transport is linked to environmentally efficient food procurement as a smooth everyday system for the consumer.

Consumer journey has many aspects even when viewing a single area of consumption. With the help of the path set out in the customer journeys revealed by the user interviews the following suggestion describe the ways that could help consumers to act to reduce the environmental burden of food use.

Interests are important starting points for spreading knowledge and motivation to even think and try out the change in eating in a more environmentally efficient ways. Scolding information campaigns are not a good solution. Information that reaches people in connection with their interests and their relevant themes is appealing and people listen to it. It is also easier to tackle the one-off phenomena in a complex whole than to try to deal with a complex whole in one go.

One common area of interest is the food itself and cooking. For this reason, publicity, such as television cooking programs and various other channels that direct people to try food options, are also potential influencers in increasing the use of environmentally responsible food. Food products and instructions are also associated with important healthiness and cleanliness perspectives. Cooking guidance also involves crossing an important feature that prevents change. It has been found that being able and competent is an obstacle to making a change, which is why guidance on environmentally efficient cooking is particularly important. However, traditional food guidelines in Western countries, to which the majority of older citizens have been taught over the past years, are largely based on meat as a starting point for main dishes, which is why guidance on cooking different vegetarian and protein options is important.

One way of influencing is that people tend to follow opinion leaders. Celebrity chefs, for example, are one important source of educating about eco-efficient food. Celebrity chefs include both bloggers and tubers who influence in social media, as well as chefs and experts from TV channel food shows. Of course, it would be socially impressive if celebrity chefs increasingly started to lead the way and share information about the environmentally responsible cooking, either on different social media

channels or on television shows. Television food programs include not only celebrity chefs, but also various competitive programs, including food making from certain foods. Such programs would, of course, also be a good channel for guiding the use of environmentally efficient food in the name of social competition.

A special cooking phenomenon related to cottages and summer activities in Finland is Barbecue. Barbecue is surrounded by a lot of advertising about meat-based solutions and also involves competitive barbecue master events. It could also be possible to exploit this phenomenon by making the range of products to be grilled environmentally responsible or by organizing competitions of vegetarian barbecue master. Even as a competition focusing on meat products, one section of vegetables would be a good option, as this would not, in a way, label the issue as fanatical, but would bring the possibility of vegetable barbecuing alongside meat as an option and present the vegetarian option to those who are enthusiastic about grilling meat products in an interesting and easy way.

Cooking recipes could also include alternatives and a comparison of environmental performance when using different food stuff. This would consider the relevant request by the interviewees that the sharing of information of the new, ecological alternatives should be presented by comparing them with familiar issues already in use and known to the consumers. Just as the weight loss guidelines include information on the number of kilojoules and calories that are associated with food rations, the portions of the recipes could include information on the environmental impacts they cause and the typical ingredients that cause a lot of impacts in relation to the responsible food stuff that could be exchanged to use instead.

Actors producing cooking guidance include the authors and publishers of cookbooks or the national Finnish domestic care organization, Martta, which offers food instructions and cooking guidance. Of course, Martta organization has had good guidance on ecological food and seasonal vegetables for decades. Food education in

primary and other schools could also better include environmentally efficient dishes in their repertoire. An important aspect of the recipes would be that the consumer does not have to give up familiar and normal recipes and food can be transformed into environmentally efficient ingredients and made in an environmentally efficient way, rather than always offering something completely new, foreign and perhaps therefore suspicious as an alternative. It would also be a good idea to describe activities related to local food and local associations or equivalent eco-efficient food in local newspapers.

The big S and K supermarket chains in Finland are key to food behavior change because they also have their own magazines that go to members. If these actors decided to start effectively changing eating habits in an environmentally efficient direction, they would already have information, awareness-how and food guideline channels, which are widely distributed to Finnish homes, through their customer magazines. In 2019, the S-chain has already changed the food guideline supplement of The Common Good to the name Sesonki, Seasonal and started to highlight the effects of seasonal vegetables already in 2017 and gradually placed greater emphasis on responsibility in the recipes offered.

The supermarket chains also provide the possibility to send targeted messages to their customers through the customer register, for example about their special offers for environmentally efficient food products or campaigns related to such food products. The potential of retail chains to influence the adoption of an environmentally efficient food is also more reported in the case of trading-related solutions further on in this chapter.

There is also food guidance provided by national and local newspapers and other public media. Typically, this is the special food theme of Helsingin Sanomat on Thursday and the different food themes of magazines. Various wide-spread media channels also have the opportunity to spread the message of environmentally efficient food other than just providing food instructions. In England, the BBC has published a climate change food calculator. Through 34 food products, this calculator can be used

to calculate your own climate impact, and the program provides information on the choices available with different food choices. (Stylianou et al. 2018).

It is possible to start building on the consumer drivers the messages how environmentally efficient food can be made known. One such theme of interest was nostalgia. In a positive sense, this can be food prepared by grannies, pure natural and vegetable content when it comes to recipes. The normality of recipes is accompanied by the tradition-friendly feature that one could be instructed to make basic foods from environmentally efficient ingredients. A big change such as the vegan challenge is not necessarily needed for change but can also start from what is often important to consumers, of feeling normal: seasonal food, healthy food, clean food, local food. The Martta organization has succeeded in providing such nostalgia-colored recipes, that also refer to consumption frugality.

Nostalgia was also accompanied by the enthusiasm to grow vegetables yourself. This involves all the activities in urban farming, which may not rationally be so sensible in terms of efficiency but increases the appreciation of local food and food in general. Own cultivation can reduce the desire to throw away food when you see what effort and process it is to produce food. Clubs and guidance related to such activities are, of course, one way of inspiring consumers to appropriate food in a more environmentally efficient way.

Such food circles already exist, where vegetables are produced in a district garden. These include a certain commitment for using time, for which consumers with little time resources as a determining factor in everyday life, may not have resources for. Also, picking up a weekly vegetarian box from a certain place, a certain time is challenging. It also easily requires the use of a car. A certain large vegetable box is also problematic if there are not many people in the household to consume it, or if there are people in the household who have to travel a lot and do not always have time to cook at home. Such small family and mobile lifestyle features are an increasingly growing part of

the structure and functioning of modern society's homes, and weekly packages for home-cooked food as a solution are not the solution to small families or in a mobile life situation. It should also be possible to develop local food gardens offerings into flexible ones, take when you need, versions.

The good things about food garden solutions are food produced in a local way and the fact that participating in the production of food itself emphasizes the value and relevance of food when the consumer actually sees the hassle of growing. This increases slow, rational and reflective thinking, respect for food and motivation to take it and potential waste seriously. What would be interesting about such a solution would be how food gardens functions could be combined with other solutions that also facilitate the consumer's operations, such as e-commerce and its transports.

Many respondents to this publication's interview material actually considered it important to eat vegetarian and clean food for health reasons. Through health, it would be possible to highlight environmentally efficient food in places like sports clubs and to market healthy, clean and ecological food in different ways. Such education in general in any context could be accompanied by lists of good health effects of eco-efficient food and lists of negative health effects of environmentally not so efficient food. Similarly, it would be possible to provide information on the purity of eco-efficient food products, which additives they do not contain and, on the other hand, information on the lower purity of less environmentally efficient food, and what additives they contain.

Self-monitoring is becoming increasingly normal, such as monitoring vital signs through health tracker. This could also be used to make a more environmentally efficient diet common. Monitoring yourself could also be linked to eco-powered health food and monitoring of how to stick to the goals in this regard.

Animal welfare was even more important to many interview participants than climate issues or other nature conservation issues. Linking animal welfare to reducing meat consumption would clearly be one good way to bring responsible meat use to

consumers' plates of food. This is linked to the fact that it was precisely the real seeing and experiencing of intensive meat rearing that had, as negative thing, contributed to the transition of some interviewees to a more responsible consumption of meat, both in the name of a less quantity and in the name of consuming responsibly reared meat. What is interesting, of course, is how it would be possible to organize such real meat production experiences. In virtual worlds, of course, it would be possible, but the experience should also include sounds and smells to be impressive. Negative experiences should be accompanied by instructions of what to do. Several interviewees have identified as challenging to obtain responsibly produced meat so clear instructions on this would be required. Also, instructions of how to reduce the use of meat, should also be added.

Many of those who took part in the interviews said that buying responsible meat was difficult and expensive. On the other hand, there are opportunities to make it easy with various measures, such as well-established joint purchases in the workplace. There is also the communication aspect of responsible and expensive meat that when something is rare in this way, it also becomes emotionally appreciated. In this case, rarity value could also be a route to the appreciation of meat in the sense that it would be used less. Strict legislation, even restricting the volume of production and use, higher taxation and price increases, would also have an impact on the increase in the value of meat. Of course, the same needs to increase restrictions and penalties also apply to high-impact dairy products, such as long-ripened cheeses.

Instead of interest, it may also be useful to look at claims related to the lack of interest. The findings indicate that there are many young men in particular who do not care about environmental issues. However, in terms of interests close to environmental responsibility, the nature relationship of young men is not hopeless. In addition to cooking and exercise, there are also a hobbies of fishing, hunting and even mushroom and berry picking. Supporting and disseminating such hobbies as good practice is

also an excellent route towards environmentally efficient eating, provided that these activities are not instructed to be carried out in such a way that they themselves produce a lot of environmental loads, such as fishing trips to Thailand.

It is also important to note how interests and maintaining one's own identity can shake hands in communication projects that have proven to be effective. Young men are also enthusiastic about vegetarian food, as it has been offered on social media under the theme of Sipsikaljavegaani, Chips and Beer Vegan. This Finnish group's Facebook page showcases street food in the hamburger pizza line type, which is often easy and quick to prepare. The end result is rough and far from gourmet genre, so it doesn't conflict with a young lad type of rough identity.

Public figures, not only celebrity chefs, are also in a position to act as important and watched influencers. People tend to follow some of those in power as opinion-formers or otherwise figures prominent in an area of interest to themselves. President Sauli Niinistö's introductions to his vegetarian diet was a followed-up and considered as a normal phenomenon. Neste Oil's figurehead has been the basketball player Lauri Markkanen, who has been successful in the USA since the end of 2018. Despite his enthusiastic reputation as a steak eater, in December 2018 he tweeted @MarkkanenLauri: "As my first action for #DontChoke, I pledge to stop consuming red meat as a concrete step towards minimizing my personal carbon footprint. Every move counts, play your part (Markkanen 2018).

Places where environmentally efficient eating can be spread are especially those where people also have to visit in the name of necessity. In schools, it would be important to serve good vegetarian food for demonstration purposes. Experiments to increase plant emphasis in university meals have started in Finland. Beef was announced to be removed from lunch service at Unicafe restaurants owned by the Student Union of the University of Helsinki in February 2020 due to its high climate impact compared to other meat products. The abandonment of beef was estimated

to reduce the carbon footprint of operations by 11%, or around 240 000 KG of CO2. The initiative to give up beef has come from Unicafe staff members and has been approved by the student union of the University of Helsinki. The idea is to replace cow meat with either chicken or pork, but the hope was actually that the customer would choose a vegetarian option and there is an effort to increase vegetarian and vegan lunch sales share by more than 50% by the end of 2021. (Salomaa 2019). There are also new ways of improving environmental efficiency in university canteens elsewhere in Europe.

School household management lessons and health information provide excellent opportunities to spread awareness of the importance of food choice for the benefit of the environment and well-being. In addition, jobs play a key role in such awareness-keeping work. In relation to the health effects, intervention projects have been carried out in the Stop Dia project, which has carried out research-based interventions in workplace meals (National Institute for Health and Welfare 2019). Food according to health recommendations include more vegetable emphasis than current consumption. One example of workplace related opportunities in addition to lunch options assembled on the basis of good vegetarian and local food is a WeWork co-working office-type solution that prohibited workers from providing meat food at events they organized as part of the company's efforts to reduce its environmental impact (Trend Watching, 2018).

In the results of the psychology of behavior suitable times for attracting interest and starting to change behaviors have been related to a change-phases of life. The right timing for the campaign to embark on a good new and planetary less destructive diet offers are year-end changes as the end of the holidays and the start of schools in the fall, when many start a health interest or an April summer diet that could also be associated with the question: why not start an environmental diet too? New Year's resolutions could be accompanied by the possibility of change, because a self-made promise is also an important means of change proposed by the psychology of behavior,

especially if there are support measures and suitable provision to help consumers.

Finding environmentally efficient solutions, access to them, understanding and learning from edited information are essential drivers for the consumer operations. In terms of discovery, ordinary, local food stores and supermarkets would, be an easy way to find environmentally efficient food and products, even in the opinion of the interviewees. In the midst of everyday haste, everything should be available in the same place, as collecting products from different places, sourcing local food or ethically produced meat or anything like that is laborious. There is no need to change the habits and scrips of stories that have already been imbedded to the mind of the consumer. This also involves the fact that grocery stores have a great responsibility, and in particular a wide range of opportunities to present environmentally efficient food options to consumers and share the knowledge and know-how involved.

In relation to the actual food supply service pathway, one important criterion for solutions and guidance is that food is, however, a matter of personal preference, in addition to the facts that there are also questions about possible allergies or other serious health restrictions. Whatever the guidance, it must take into account the possibility of personal choices. Within their own preferences and constraints, consumers should be instructed to choose environmentally efficient food products.

In this context, ordinary grocery stores also have the important issue of social normality, which many of the interviewees stressed. In connection with this, it is possible to consider different levels of Business as usual solutions in ordinary grocery stores. This is clearly represented by the already typical way of serving vegetable-based prepared foods in the same rows of shelves as those containing traditional meat based options. From the consumer's point of view, the solution that supports the discoverability and experimentation is also, in some respect, difficult. You often have to focus on looking for vegetarian options when mixed with prepared foods containing meat. Perhaps grouping shelf markings and shelves would make it possible to find

low impact solutions even better, even if a good basic idea of normality and general findability of ready-made foods is preserved. Ready-to-use food also represents an easy-to-use feature in the environmentally efficient customer journey.

The ecological food basket model, through the display of different aspects of environmentally efficient food as a whole to the consumer, has already been identified as a viable option in previous consumer studies. Such a model simplifies and, on the other hand, concretizes the complex issue of environmentally efficient choices of food. In order to make it easier for consumers, grocery stores could produce new kinds of shopping carts with instructions on products suitable for an eco-food basket, which would make it possible for the consumer to choose low-impact food options. The environmentally efficient food basket model on shopping carts or baskets would conveniently be available through the whole food purchase journey and advise you on what to buy. One option would even be for the cart or basket to beep or indicate by some other means whenever you try to put in products that produce a lot of environmental loads. Such a cart or a basket would also have a social significance as a communicator that the customer wants to buy in an environmentally responsible way.

You can also guide and facilitate your choices at the decision-making level of individual products in stores. Products that produce low CO2 emissions or produce little material footprint can be marked with shelf markings, or such labels can be added to the products themselves, allowing consumers to pick up suitable ones from these options. If the labels had been assessed slidingly, this could also be compared with the signage of the sweetness of the wine, with one extreme being the products producing more load and the other with low load products. Such labelling could also help the operation and growth of existing consumer types, which would mainly choose responsible products and then, at one of the most important ones for themselves, take one or a few more irresponsible exceptions, in accordance with the important freedom of choice.

Clear labelling makes it easy to find responsible products. This is not the same as very small and multipolar product information in packaging, which few people have time to study, and which can be difficult to understand. Attention value is important when shopping quickly, so clear labelling, such as a specific label for environmentally efficient food products, would then be important. Of course, these purchases can also be attracted by other motives, such as anchoring the attention first through healthiness and pureness, which would stimulate interest, willingness to buy and divert choices in an environmentally efficient direction. If healthiness is an asset, then different seasonal vegetables could have signs, which are all the good and health-promoting ingredients they contain. In fact, pureness could also serve as a sign of low environmental burdens, both from the point of view of health and the environment.

An arrangement has also been used internationally where, instead of product-specific or shelf instructions attached to different food items, environmentally efficient products are collected in a supermarket in one place. Such a solution involves preservation problems when different products require different equipment. The buyer should then easily find such a shelving. An entire shelving acts as a ready-made default selection, which has been found to be an effective driving factor. However, it allows you to look for other products as well, if you specifically need them. From a commercial point of view, it is desirable to increase the number of purchases, so the shop prefers the consumer to wander around for a long time looking for different products, so a one-self option is perhaps bad for merchants in terms of business.

Another concrete possibility is the total reduction of high environmental impact choices from shops or making them very expensive. Legislation could ban certain foods or food products or involve heavier taxation if they are environmentally burdensome. In fact, interviews also often revealed that the interviewees did not think it was bad that regulations and taxation would intervene in consumption in such a way as to steer it in a more environmentally efficient direction. Such thinking follows the principle of fair

solutions, because then consumers would have a sense of fairness that everyone should be treated within the same rules, making it easier to commit to doing so themselves. On the other hand, people wanted regulations and the interventions of the public sector, because they felt that they themselves were too lazy to make major changes, which were, however, understood necessary.

Of course, in larger settlements, the grocery store can also be completely focused on eco-products. All products selected there meet the basic criteria for sustainable, environmentally responsible consumption, and the whole shop forms an ecological food basket. In this case, environmentally efficient purchases are not only marked to facilitate a possible choice but are the only choice.

I've also heard suggestions for smart solutions, such as apps, where you can check the environmental impact of every food item on your mobile device when you buy it. This is, of course, suitable for a consumer who has plenty of time to spend on groceries, at least initially, and then we also need a very robustly motivated buyer. For many consumers, such a solution would be far too laborious to start or, to some extent, to maintain, based on the interviews in these publications. Urgency and inertia are important barriers to overcome. Visiting a grocery store in the midst of everyday haste means that there is usually no time to find out the environmental impact separately for each product. At the very least, a mobile solution should be such that it compares different products by some easy and similar criteria with each other and gives smart options as advice. Comparing products is also difficult if you have to study different areas of the influence separately. An overall picture of what it would be good and wise to buy in the name of environmental efficiency may also remain unlearnt in individual solutions. By this I also refer to the important issue in the psychology of change that consumers 'ability and sense of ability should be increased.

Of course, there could be intelligence in the food tips that automatically calculate the ecological impacts of different products and, warn you whenever you try to

put something in, according to the agreed definitions, that produces too much environmental impacts. This would also leave the consumers with the opportunity to consider whether they would take one such product if it is particularly important. This still refers to the type of eco-consumer where most consumption tends to be environmentally conscious alternatives, but one exception is nice to exist. A certain opportunity for choices and flexibility also makes environmentally efficient consumption less strict, when rigidity and complexity are green consumption traits that frighten consumers and make it easily alienating.

Since visiting a grocery store is often a busy event in everyday life, the online platform could offer self-made tailoring – eco-purchase instructions made for your own needs could already be made at home in peace. You can feed your own typical foods and preferences to the platform, and each of the preferred food choices would provide you with advice on whether it is environmentally efficient and the more efficient, alternatives suitable for the same food types would be presented. This would be a more effective option on mobile than checking at the shop each product, if such a platform produced a ready-made shopping list that would have undergone an environmental performance check and would be available as an effective food shopping tool. The shopping list is also one form that is perceived to be normal to instruct you or family members when shopping for groceries.

Food marketing and product marketing and advice typically also occur in shops. It would be possible to direct such activities towards information on environmentally efficient food and to organizing possibilities of experimentation. This could mean presentation counters with reference material on different food items and products. Tastings are also typically arranged in grocery stores. Enabling experimentation is important because it can lead to both to learning, acceptance and deployment. The possibilities of experimentation also produce commitment when slow thinking gets under way. People also tend to accept products offered as free distribution, even if

they do not buy these same products on their own initiative. Small presentation tastes can be a stimulus to learn more, as long as an easy route to obtain more information has also been arranged. In grocery stores, for example, it could be an easy route to go online to a database where you can get to know things more at a time when you are not bothered by the busy schedule of visiting the grocery store. In order to familiarize people with environmentally efficient food, grocery stores could also organize a special weeks or happenings for environmentally efficient food, as Lidl already does when displaying and selling food products from different countries.

Buying food through supermarkets or smaller shops typically involves transport issues that have an environmental impact when many customers make their purchases using a private car. Grocery delivery systems can be applied as has already been the case, so that the store can collect the products and the shop arranges logistically efficient home delivery. The possibility of borrowing various zero-emission means of transport, such as cargo-bicycles or towing bags could also be a way of promoting driverless shopping.

If you think about the information offered in the grocery store, then it would be important to simplify complex things by putting them to smaller parts or collecting them to holistic visions. This could once again mean using something that is already considered normal, such as applying a food plate model to the education of environmentally efficient food. Of course, in such a simplified way, information about environmentally efficient food could also be transmitted online.

The purchase of food through online trade is becoming more common. As this still represents for many consumers a new practice, is also an opportunity as a moment of change to change even the quality of consumer’s food supplies. This points to the observation of the psychology of behavior change that at a time of some meaningful change, people can more easily be guided to make other changes as well. In such a situation, there will be a change in the entire consumer's operating system, which

would make it easier to make other changes than when the old method of shopping in a grocery store is continued.

It would be possible to link the entire supply to environmentally efficient products or the possibility of getting an environmentally efficient range of food products as proposals in relation to your own choices and needs. E-store choices could represent a place where you can try different choices and get comparable information about what kind of footprint the choices represent. The experimenting with the different impacts of food would produce kind of game-based learning and make the consumer more capable in interpreting the food ingredient impacts. The question of capability once again points to requirements of the behavior change psychology in the face of starting a new thing. Feedback could come connected to the new options as a reduction in relation to what the consumer intended to buy at the beginning. In this case, the consumers can also reward themselves with the appearing good and improving result.

An online store could work in such a way that it assembles a basket of food according to your wishes but converts the products in it into environmentally efficient alternatives that work accordingly. Thus, poor consumer requests would be made more environmentally efficient. At the same time, such a system would teach consumers to see what kind of products an environmentally efficient food basket consists of.

If an online store is allowed to switch the customer's food proposals to more ecological alternatives, this would work in the same way as the already normal exchange of medicines in pharmacies to a more affordable parallel option. Switching could also be supported by comparing old food with a new, more environmentally efficient alternative in such a way that the comparison would give concrete light to the advantage of the new one such as by producing – 20% less CO2 emissions. Of course, the comparison could also be shown by concretely calculating emissions or some other impact value for each food. However, one impact value would suffice, which could then easily be compared to one of the impact values produced by another

product. If the comparison could show clear differences in impact volume, it would be easy to throw in the question: why not switch? Once the e-grocery store would have supported the possibility of being able to choose the default choice or default recommendation for environmentally efficient products, then the consumer could be supported to determine such default activity as the normal setting by pointing out what urgent environmental threats the world has and then to highlight that by buying in an environmentally responsible way you can make a difference. Intimidation, as explained earlier, should be followed or accompanied by instructions on what you can do in practice.

The profile selection can also be compared to the famous example of organ donation, where an important difference has been noticed in relation to how the question of organ donation is set. If you ask if you want to be a donor, only a very small percentage of people say yes, but if the choice is that you don't want to be, then 95% don't choose this option and stay as a donor. So if you were asked if you wanted to start buying ecological food, fewer people would dare to commit directly to this. If, on the other hand, the choice was that you did not want to start buying ecological food, it would be easy not to make such a choice, and then the consumers would commit themselves, with a lighter mind shift, to focusing on ecological food choices.

When a customer comes to an online food store, the company could also ask in the profile choices whether you value nature conservation and climate change prevention –when you say yes, as many would – you get feedback: by buying, you can make a difference and the platform would then set ecological options as your default choice. In the psychology of influencing, a form of behavior has been observed that people want to maintain continuity in their own perceptions of themselves and in keeping self-made promises. In this case, enabling the self-selected concept and the promised action should also be supported by advising on what kind of food stuff would be environmentally conscious.

Online shopping also involves the possibility of reducing the burden on consumers' mobility to grocery stores. The e-commerce and transport service system involves reducing consumers' visits to the store by car, and the transport of e-commerce can work, for example, by electric car and well-designed logistics to reduce the environmental impact. Including trips not made by consumers, the environmental burden of eating could then be reduced overall. The online store could also be accompanied by a return packaging system such as a milk truck, in which food products are transported in durable packaging, which is collected back while new ones are brought to home filled.

When it comes to transport services, there are also questions of time and trust in such a service. Can home delivery be excluded if the consumer is unable to receive it at a certain time? The use of time was clearly a critical factor in consumers' operations, so such issues in home delivery solutions should also be considered as smooth service phases for the buyer.

The possibilities and online solutions of e-shopping are partly related to the data mining and individual data collection activities of large groups of companies behind supermarket operations. In Finland K- and S-Group supermarket chains develop their own services and sales based on the customer information. In the year 2018, for example, K-Group strived to better tailor its communications to the preferences and life situation of a particular buyer, while the S-Group opened the customer's own data for themselves to see even so that detailed information on the products is available (Nanbantoglu,2018a). It is also possible to teach AI that makes personalized marketing on ethical and responsible consumption (Nanbantoglu,2018b).

The personal information use is a major issue of responsibility for groups and chains of grocery companies, which in fact have considerable power over food selection issues in the current market. Both S- and K-Group's purchasing information model also has great potential for highlighting ecological food options and teaching customers, if business

operators want to influence such matters. In K-Group's model, in addition to identifying preferences, AI could identify and help customers seeking ecological purchasing. If the customer so wishes, it could be programmed to help and nudge customers through offers to ecological food choices, even when they would not previously have had such tendencies. In the S-Group model, it would be easy to add information to the buyer's own purchase profile about which of his favorite purchasing groups are low in environmental impact and which produce high impact. Of course, product information would also make it possible to highlight ingredients with unfavorable effects.

Both the S-chain and the K-chain have launched a carbon footprint calculator in autumn 2019 that examines the calculation of the carbon footprint of purchases through customer owners' and customer card users' purchase data (Mannila 2019). This is a useful information service, but it still fails to advise on alternatives to low-emission food or on which are the worst. Information is one thing, but in addition to negative information, information should always be provided on what to do to remedy the situation. Chains should also simply advise their customers. When you leave out some food, what can you buy instead? For example, ripened cheeses can be replaced by a variety of vegetable coatings suitable for bread.

The appearance of vegetarian food fair as a normal way of exploring new products can also be considered a separate accessibility and learning pathway. A fair is already considered a normal place to take a peek at various novelties. The location of these kind of a fairs in Finland at places such as the culture activities based Cable Factory can in itself strike a certain style stamp, even alienation to an event. However, the introductory text on the Finnish Vegetarian Food Fair's Facebook website Vegemessut (2019) is a good example of the way in which the supply of vegetarian food could be promoted: " Vegefair brings vegetarian options easily available and shows how easy and delicious vegetarian menu is. Vege belongs to everyone: the fair offers ideas for culinary enthusiastics, athletes and for busy everyday life."

Positive perceptions and social inspiration, acceptability and normality, as well as rewards, are an important part of the processes that enable consumer behavior change. Shops have typically had a lot of functions that try to both attract customers and make them enjoy themselves in stores. It is also possible to use such means for promoting environmentally efficient food and products and for rewarding the customers for this. Public figures such as the mayor, sports heroes or especially chef celebrities would work well as lead users who could be used as mannequins for environmentally efficient food products in shops and as interesting and normal user examples of such products.

Ongoing events such as a week's vegetable and its instructions could be related to the use of seasonal products. People also have a desire to collect and tend to complete a whole, which would attract the collection of the seasonal food table of the year (vegetables of the week) and the completion of the whole. Rare is also considered valuable, so offers of this type could be available in “only this week” -type of offers, especially to attract and guide and teach you how to use seasonal vegetables. Happy planet hour of, for example, 16-18 o’clock could be located in the typical post-work food purchase period, when the store would have special offers for environmentally efficient food products. Unexpected and playful events and activities could also be exploited, such as a polar bear or bunny directing environmentally efficient shopping as adventures and eating, even in a little sarcastic and humorously, in a "bunny food" way. Of course, it is possible to develop a lot of different promotion ideas that are adaptable to normal grocery shopping, and to attract even rather spontaneous eco-food purchases. This last being a way that some consumer groups do their shopping even normally.

Positive feedback is important when you have decided to make the right choices. Special gifts such as a special eco-food bags, garden or polar bear stamps or labels as a reward for a customer buying food products in a good way would at the same time

be a social sign outward of consumer responsibility. This of course, if the stamps could only be obtained when the consumer would have actually bought environmentally efficient food. Getting social status is also one way to promote change. In itself, the food basket or guidance cart, which would provide guidance on environmentally efficient purchases, was already presented as a sign of social status for others of an ecological lifestyle. It would be possible to use the same means of evidence of status if the purpose was to highlight healthy (and at the same time ecological) food for its buyers as a sign of status rather than ecological food. Getting some VIP service would also be a good reward for the customer’s environmentally efficient achievements. Premiums to reward meaningful achievements could also support the consumer's positive efforts, such as an eco-food basket, a special eco-food basket or local meat as a reward for environmentally efficient purchases. The reward could also be a home delivery to ease the effort and haste that are important challenges for the consumer's everyday life.

There are plenty of opportunities for personalization and social competition, such as Insta wall in a grocery store where your own food baskets or prepared environmentally efficient food could be on display. There are also opportunities to organize competitions to monitor purchase data. If the loads on the average purchaser of the year were compared with each's own results, certain premiums and social visibility (social rewards) could be distributed to those below the average.

Competitions could also be held in a communal way. This would calculate what the reductions in the carbon or material footprint of food are made jointly by a group of people. Such an approach would make it possible to tackle the very idea that there is nothing a small person can do. The joint results are larger and more effective than that of a one person. This would require considering what kind of groups or residential areas or, for example, shops would be put out to compete with each other. Of course, citizens or workplaces could also be asked to challenge other groups to take part in such competition.

These kinds of challenges have already been offered: The Meatless October or Vegan Challenge are excellent examples of the power of civic activism on social media and, on the other hand, the importance of the competitive challenge of social action as an activator. However, it does not necessarily require such a major and sudden change, but experimentation can also be launched gradually and with an emphasis on permanence. From the point of view of the continuity of everyday life, food stores should also be activated in connection with degrees and competitions to act effectively as the supporters of change.

Competitions also involve a public sector perspective if it generates rewards for certain activities. The taxation of environmentally efficient food could be reduced, and this would create a sense of reward for an individual buyer when purchasing these products. The public sector could even target competitions to the level of shops, so that different ideas to reduce the environmental load of food would receive support or the possibility of tax deductions.

The competition and increasing ability are also related to the possibilities of gamification. There could be different levels of expertise, such as how many food areas you manage in the game. This also involves conscious setting of levels – gradually learning what to buy and use to gradually become environmentally efficient in different food areas. New features can always be opened up in the game or rewards such as food instructions. Competitiveness can also benefit from the level type of thinking in different ways. Levels could be determined by total food consumption marked as -10%, -20% and so on and their rewards.

Sharing is also social and in connection with food it can mean recipes for both environmentally efficient food and scrap food. Co-purchases of food in the workplace are also an example of a realistic potential for social sharing. After all, these had been done with the interviewees in the case of responsible, locally produced meat. Similar joint purchases could also take place in residential areas, which would further allow

joint transport for these purchases.

Easy use is essential to promote low-environmental impact food purchases. This was already discussed by the importance of food preparation and the provision and spread of food recipes and preparation instructions at the beginning of this food service theme. Of course, highlighting vegetables and local food can pose challenges for the preparation of the food itself. For this reason, easy and efficient recipes and their provision even when buying food would be important, bearing in mind the greatest challenge, the sparse resources of time everyday life.

It is also important to highlight the extent to which prefabricated food is environmentally efficient or not. The consumers may have misconceptions about the true effectiveness of the various alternatives and miss out on good alternatives if they think that the production of environmentally efficient food is only related to virgin raw materials and too difficult. It is also important to highlight and show calculations of prepared food as environmentally responsible with credible research information. Such information and labelling should be available at the time of purchase, in accordance with the purchase situation.

It is also interesting to what extent the production of food itself produces environmental loads. There could be advice on ways to make food that saves electricity or gas as well as on environmentally responsible food itself. In Finland, food is also prepared in the wood heated ovens, and related emissions are one of the food-related issues in which advice on the use is needed. On the other hand, the oven for heating the house can also be used for cooking and there is a double function achieved against the emissions.

The use of the refrigerator or the ratio of freezing to freshly used food and its effects are also an interesting target for reducing the environmental impact of food use. Cold chains are important for maintaining food and avoiding unnecessary food waste, but consumers could also be advised on the extent to which cold storage is

done in vain. Nostalgic advice, such as keeping food in the cold outdoors during the winter, may also be a possible route to reduce the energy consumption of storage. All energy or water-using equipment in food preparation also involves how much they are used, whether use can somehow be reduced and how consumers could be advised to purchase equipment that is as environmentally conscious as possible. The proliferation of smart solutions also enables new services, such as monitoring and optimizing energy or water use, or services such as date of use notifications and reminders of food already acquired.

In terms of food, the steps after primary use are also important, such as the allocation of the left-over quantity and the recycling of waste material. Waste is already related to the preparation of food itself, if the consumer does not understand, which parts of different food products, such as vegetables, are edible. There is also a challenge in the preparation of food that different food items are unevenly left over already at the preparation stage. This challenge is influenced by the portion sizes of store packaging, the ability to buy only the required amount and the availability of instructions even in the event of a purchase. One solution has been a shop solution of the type Weigh and Save were it is possible to weight yourself and buy only the required amount. These solutions and the use of durable containers have been proposed internationally as one of the means of defeating food waste and packaging waste. If the ingredients cannot be purchased for a single meal only, the consumer can also make a difference by preparing food for several meals at the same time.

The issue of food is a big one. We can even talk about systemic failure in terms of food, because 69% of the food produced is used, 11% is wasted after purchase and already 20% is wasted in transport logistics (Fromberg 2018). The large impact of transport logistics also suggests that attention should be paid to local food, its availability and use to tackle the issue of waste related to consumers, in which case the change in consumer activity would also have an impact on the reduction in the need

for logistics and, at the same time, on the reduction of losses through logistics. This could also be accompanied by the fact that, as online food sales increase, larger local storage centers can also reduce the complex transport routes of food from one place to another. Internationally, IDEO's design agency Open IDEO's (2018) project on the future, in which food is not wasted, offers a wide range of examples of ways to avoid food waste. One consumer-centered example was the design of a joint purchasing platform for consumers.

The problem of waste is also accompanied by an increase in the number of small households. In this case, the quantities of food rations in the store's packaging are easily too high and some of the ingredients remain unused. There are also few users of food in the small household, whether something is left over from cooking or left over from meals. There is also unnecessary consumption that not all parts of food, such as vegetables, are used. Left-over food advice can also be presented and distributed in an enhanced manner by all those who have already been presented as good food instructions.

The relationship between already bought food and buying is an important point of optimization. Using data from your own purchase data, optimizing your own purchase volumes can reduce waste. Online shopping also offers opportunities to optimize purchases though technological solutions. Technological IoT solutions are also expected to solve these challenges if the refrigerator starts to indicate what food is there, what needs to be bought more and which food stuff is getting old.

There are many different pathways to avoiding waste food. The solutions changing a large plate to a smaller one when it comes to losing weight means that less food is automatically taken. This same solution seems also to work to ensure that you don't take too much food that you can't eat on a plate.

If there is left over food from some meal, it can be used as the same dish in the following days or it can be prepared into some new one. Similarly, ingredient left over

material from cooking can be used creatively and following waste food recipes to prepare new dishes. It would be important to offer food recipes and teaching this type of food preparation through different media and courses. Fortunately, such examples already exist, as food instructions how to make delicious food from leftovers. (Leminen & Bäcksbacka, 2018). The current cooking boom has placed a lot of emphasis on the purchase of certain food ingredients always as new ones. This does not guide the efficient use of scrap food. Here, too, all the channels that provide food instructions to consumers are key to changing skills and behaviors with their own guidance. An interesting idea would be to organize cookery competitions typical as food programs, where waste food should be used instead of new raw materials to prepare the dishes.

A typical way of producing food to be thrown in the trash is to forget the food for too long in a cupboard or refrigerator. In determining that the food is old, the consumers have already started to have enlightening instructions that the last date indicated on the product does not necessarily indicate whether the food is really gone bad but sniffing and tasting are also important means of defining before throwing it away. Typically, old food is left behind newer ones in cabinets and refrigerators, and in this context, an interesting innovation would be related to cupboards or refrigerators, where new products could be by different means easily be put behind the old ones and the old ones would always be noticeable first when looking for something to eat. One solution is also to develop technology aided food containers with a reminder function related to the date. The box points out that it would be time to eat away the food. There is also the problem of forgetting old foods that are under cover, when there seems to be no time to first check for old ingredients, before buying or using new ones.

The distribution of food has become more common as a phenomenon. However, food is associated with serious hygiene challenges and continuity of cold chains. When working with food, you must always take into account the fear of illness and the possibility makes it difficult to share. Various waste food collections, which also have

the possibility of refrigeration, have begun to solve these challenges. The arrival of waste food cabinets in residential areas is a way of working where nearby residents and businesses can bring surplus food to shared food containers, refrigerators and freezers and people grab those suitable for their own use. In Finland by 2018 these had already been tried at least in the cities of Kotka, Valkeakoski and the capital Helsinki. (Leminen & Bäcksbacka, 2018). However, there are also food products where the problems of preservation do not come up very seriously or quickly and online trading services for sharing these is possible. Sharing an excessive apple crop on the street is also one positive, communal and easy example of over supply sharing.

In addition to distributing your own extras and waste, one way to buy environmentally efficient food is to get food in the form of waste food from restaurants. There are challenges for consumers. What is the moment you need food? For example, is it at home at 6 p.m., when you don't go looking separately for a waste food purchase opportunity? How could waste food work then? A pizza taxi-type of waste meal service would be an interesting solution or a combination of waste food with the online store and delivery of other food.

In Finland the solutions that have been developed include mobile app ResQ Club that collaborates with grocery stores, restaurants and cafes and users can "save" grocery bags and portions that would otherwise end up being wasted. ResQ Club operated in 24 cities at the end of 2010’s. Another equivalent is Lunchie Market, offering extra portions of restaurant dishes at a discounted price. These services do involve the discoverability of food provided by the applications, but the services require you to pick up the food yourself in different places, which can be a challenge for the busy consumer.

The Finnish waste online stores Matsmart and Fiksuruoka.fi operate in such a way that the application takes place at a separate pick-up points or home delivery. They do not sell expiry day dishes, but the best before dishes. Buying these involves an affordable price for products that would otherwise end up as waste. This is the same

pricing principle as the typical lower-than-usual selling price for expiring products in stores. Grocery stores are involved in the utilization of waste food at their own daily discount prices for soon to be old food and buying and using such food is also an environmentally efficient act, but it requires visits to the grocery store at often late times of day for the consumer. However, if the consumer is consuming food on the same day or the next day, there are other possible ways to support users to buy food for the next few days, in addition to the price reduction. For example, the label "Eco-deed" or another premium-like reference to doing an environmentally efficient thing could be added to the lower price tag when buying the soon to be old food.

Another example of the Finnish solutions has been the brick-and-mortar store of the Church's Foreign Aid at the Red shopping center in Helsinki. It also sells waste food from various co-operation actors. The concept of the WeFood store is from Denmark, and the store is mainly run on a voluntary basis. The revenue goes to the Church's Foreign Aid Development Cooperation, which is why this approach also combines ethical good that is important in the mind of the consumer.

Several restaurant concepts using waste food have also appeared on Finnish market. All the time, there is a price to pay for restaurant portions made from such food. The consumer thinks that food deemed to be waste should be obtained at a lower price than new food. However, the manufacturing process due to the search for food and varying ingredients is more difficult than for restaurant food made from newly purchased food. This laborious process should be clearly and transparently reviewed in connection of such restaurant offerings.

Even if the additional amount of food is distributed to others, food waste cannot be completely eliminated and it is also important to consider where the rest of the waste will go. Can good systems be developed to feed animals? What other possibilities do we have to recycle the waste from food as a raw material or energy, and how will consumers be easily guided and supported to sort such a diverse waste material into circulation?

Therefore, on the whole, the range of solutions for changing food product use alone is extremely diverse. It should take into account the different stages required for the change in consumer activity from understanding what to do up to the real potential of the activity and take care of both consumers who are actively able to plan food supply and those who act more spontaneously in their food supply and consumption behavior. The above-mentioned decision-based phases and the operating proposals within them also indicate that a wide range of actors are needed to produce these solutions: from food guidance actors to celebrities and highly influential food store operators to grassroots resident communities and social media activists.

The proposed considerations of the means of influence the different stages of food procurement and use have not taken into account the impact of the more precise design and visual design of the different solutions. Solutions related to a concrete environment and visual or other sensory communication, as well as verbal choice of words, play a role in guiding consumers to make environmentally responsible choices. Different service phases and touchpoints for services should also be carefully designed so that they do not communicate in a hard-to-understand way or especially so that they leave an impression of greenwashing or fanaticism. The same requirements related to images and sentimental acceptability are also related to the service styles selected for services. These things need to be developed and tested on a real-life context-basis.

14

Heading for tomorrow’s environmentally responsible consumption

From the consumer's point of view, there are still few environmentally responsible product, service and environmental solutions that change practical lifestyles, and practical everyday advice is missing or contradictory. The International Sustainable Brands (2019) organization lists the five tasks needed to move into a sustainable future in business. One of these is to support consumers in the transition to sustainable, environmentally efficient consumption, both through the use of new, responsible supply of environmentally conscious consumption systems and related visionary nudging methods for behavior change.

The designers for these solutions have the potential to help consumers move towards more environmentally responsible activities. The design can aim for both weak and strong types of ecological consumption, continued from products that support sustainable product use to new systemic service and environmental solutions that meet needs. The needs for affection, creativity, identity, social communities, respect and freedom are not product-based needs or desires, so routes to dematerialize consumption can also be found.

In this publication presented consumer interests, help and support, advice from the behavioral psychology and a broader customer journey approach have been used as workshop material for service design to support the design of environmentally sustainable solutions. The results of the workshops carried out in Finland and several other countries have included examples from various consumer activities including second-hand product collection, online search, rental and repair services as well as food supply and food waste services and waste sorting support. Ideas have also been made on the development of city bike systems, the reduction of living spaces, the reduction of electronic equipment and the understanding of energy solutions, as well as choices. These guidelines have also been used to develop advisory campaigns to reduce the environmental load of different lifestyle choices. The various means set out in this publication can help to solve consumption services in a variety of ways and to support

the service-process-based approach needed to change consumer behavior.

Ecologically sound products should also be designed as services, because access to information and solutions are key factors in getting people to use them. People have needs for consumption in housing, mobility, food and the use of products related to everyday life activities, leisure use and celebration. User research reveals how the design of green solutions should be based on service design type of consumer journeys. They should involve immediate contact points available and accessible in the midst of and in connection with users' everyday activities and social interaction networks. It is also possible to use the psychology-type guidance of behavior change at service touchpoints to support consumers in the direction of environmentally efficient activities, even pushing or limiting them to act in a good way. User-driven customer journeys should invite consumers to get to know and use what they offer and should produce positive user experience, even leading to peer recommendations. In particular, the normalization of new, systemic sustainable solutions is important.

Our policies require change in the name of the sustainable future of the environment, even selfishly, for the ecosystem services the nature provides for human race. Change is also needed to avoid or even overcome the various threats that have been highlighted by research into climate change and diverse environmental destruction factors. The solution lies not only in making production more ecological, but also in changing the behavior of consumers by introducing more environmentally responsible products, services and practices. This is not only possible by converting production, but people must also be made to use the new solutions. It is also important what these new solutions are targeting. Will they change consumers' behavior on a large scale, or will they remain superficial and small-scale in the environmental impact of consumption.

When the ecological backpack of the ordinary consumer is lowered, housing and its energy use are usually a significant factor. Another important factor is mobility.

Thirdly, food and only the fourth is the purchase of products, which seemed to be the target of recycling measures favored by consumers. From the consumer's point of view, it would be important to highlight, in particular, important factors of influence in an understandable way and then provide for the solutions they can grasp themselves.

In providing these solutions, both private producers and the public sector would act wisely and genuinely promoting green consumption if it focused on developing solutions so that consumers could easily find, accept, adopt them and receive positive feedback on them. This means working on many fronts: user-oriented development of product and service combinations, dematerialization and infrastructure creation to facilitate and encourage consumers. Appropriate rationing, fees and the development of a new kind of infrastructure are also needed to support the change in consumption.

Hopefully the themes, guidelines and service processes presented in this publication will help to develop green consumer solutions in a user-driven way. Advice and ways of enabling consumers to make green choices and to change their whole lifestyles to more sustainable directions can be found in our humane ways of behaving and in our cultural and social interests. This publication also presents advice through the everyday life and related experiences of real consumer users. In order to truly make a difference, the means used must be linked to real life, to the real situations of use in it and, above all, to the real ways of knowing, thinking and acting on the part of the people acting in their everyday contexts, as well as to the obstacles they experience for making the required change.

References:

Akenji, L., Lettenmeier, M., Toivio, V., Koide, R. & Amellina, A. 2019. 1.5-Degree Lifestyles: Targets and options for reducing lifestyle carbon footprints. Technical Report. Hayama, Kanagawa: Institute for Global Environmental Strategies. Helsinki: Aalto University and D-mat ltd.

Artefact. 2019. Behavior Change Strategy Cards. Encouraging positive behavioral outcomes. Cited 5 Jan 2019. Available at https://www.artefactgroup.com/case-studies/behavior-change-strategy-cards/

Autere, S. 2018. Fiksu arki -kilpailun voittajat: Nämä ovat suomalaisten pienyritysten parhaat kestävän arjen ratkaisut. Sitra 26.01.2018. Cited 6 Jun .2018. Available at https://www.sitra.fi/uutiset/fiksu-arki-kilpailun-voittajat-nama-ovat-suomalaisten-pienyritysten-parhaat-kestavan-arjen-ratkaisut/

Badke, C. Walker, S. 2013. Design Sleepwalking: Critical Inquiry in Design. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 389-407.

Barendregt, B. & Jaffe, R. 2014. The Paradoxes of Eco-Chic. In Barendregt, B. & Jaffe, R. (Eds.) Green Consumption. The Global Rise of Eco-Chic. London: Bloomsbury, 1-16.

Bhamra, T., Lilley, D. & Tang, T. 2011. Design for Sustainable Behaviour: Using Products to Change Consumer Behaviour. The Design Journal, vol 14, issue 4, 427-445.

Bhamra, T., Hernandez, R. & Mawle, R. 2013. Sustainability: Methods and Practices. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 106-120.

Blomberg, J. & Karasti, H. 2013. Ethnography. Positioning ethnography within Participatory Design. In Simonsen, J. & Robertson, T. (Eds.) Routledge International Handbook of Participatory Design. New York: Routledge, 87-116.

Bocken, N. M. P., de Pauw, I., Bakker, C. & van der Grinten, B. 2016. Product design and business model strategies for a circular economy. Issue 5: Sustainable Design and Manufacturing for Circular Economy. Journal of Industrial and Production Engineering, Volume 33, 2016, 308-320.

Bratteteig, T., Bodker, K., Dittrich, Y., Mogensen, P. H. & Simonsen, J. 2013. Methods. Organising principles and general guidelines for Participatory Design projects. In Simonsen, J. & Robertson, T. (Eds.) Routledge International Handbook of Participatory Design. New York: Routledge, 117-144.

Bridgeable. 2018. Designing for Behaviour Change Toolkit. A Guide to Using Behavioural Economics with Service Design. FOUNDATION & FRAMEWORK. Cited 3 Oct 2018. Available at www.bridgeable.com

Ceschin, F., & Gaziulusoy, I. 2016. Evolution of design for sustainability: From product design to design for system innovations and transitions. Design Studies (2016). Cited 29 Oct 2019. Available at http://dx.doi.org/10.1016/j.destud.2016.09.002.

Chapman, J. 2013. Emotionally Sustaining Design. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 363-374.

Chick, A. & Micklethwaite, P. 2011. Design for Sustainable Change. How design and designers can drive the sustainability agenda. Lausanne: AVA Publishing SA.

click. Morguefile.com. Cited 29 Oct 2019. Available at https://morguefile.com/photos/morguefile/18/pollution/pop

Cor, E. & Zwolinski, P. 2014. A procedure to define the best design intervention strategy on a product for a sustainable behavior of the user. 21st Conference on Life Cycle Engineering. Procedia CIRP 15, 425-430.

Clune, S. & Lockton, D. 2018. Design for behavioral change and sustainability. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behavior Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 166-183.

Daae, J. & Boks, C. 2018. Tweaking interaction through understanding the user. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behaviour Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 74-92.

Daae, J. L. Z. 2014. Informing Design for Sustainable Behaviour. Thesis for the degree of Philosophiae Doctor. Trondheim, April 2014. Norwegian University of Science and Technology Faculty of Engineering Science and Technology Department of Product Design.

Doordan, D. P. 2013. Developing Theories for Sustainable Design. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 57-72.

Franzen, G. & Bouwman, M. 2001. The Mental World of Brands. Mind, memory and brand success. Henley-on Thames: World Advertising Research Center.

Fromberg, E. 2018. Three elements in motion. Ellen MacArthur Foundation presentation, Designing to Deliver, Service Design Global Conference 2018, Dublin 11.10.2018. Service Design Network.

Gilg, A., Barr, S. & Ford, N. 2005. Green consumption or sustainable lifestyles? Identifying the sustainable consumer. Futures 37, 481-504.

Goodman, E., Kuniafsky, M. & Moed, A. 2012. Observing the user experience: a practitioner's guide to user research. Waltman, USA: Morgan Kaufman.

Gleim, M. R., Smith, J.S., Andrews, D. & Cronin, J. J. Jr. 2013. Against the Green: A Multi-method Examination of the Barriers to Green Consumption. Journal of Retailing 89 (1, 2013), 44–61.

Han, S. S., Yu, Y. & Teng, L. 2014. Promoting Low-Carbon Policy for the Public. Message Framing matters. In Kahle, L.R. & Gurel-Atay, E. (Eds.) Communicating Sustainability for the green economy. Society for Consumer Psychology. Abingdon: Routledge, 158-173.

Hanratty, M. 2015. Design for sustainable behaviour: A conceptual model and intervention selection model for changing behaviour through design. (PhD thesis). Loughborough University, Loughborough, UK.

Heinonen, J. & Junnila. S. A. 2011. Carbon Consumption Comparison of Rural and Urban Lifestyles. Sustainability 2011, 3, 1243-1249.

Heiskanen, E. 2011. Kohti yhteisöllistä ympäristötietoisuutta. In Harju-Autti, P., Neuvonen, A. & Hakkarainen, L. (Eds.) Ympäristötietoisuus. Ympäristöministeriö. Helsinki: Rakennustieto Oy, 49-60.

Hienonen, K. 2011. Maaseutu tulevaisuuden merkitysyhteiskunnassa. Trendianalyysi. Sitran selvityksiä 52. Helsinki.

Honkanen, H. 2016. Vaikuttamisen psykologia. Mielen muuttamisen tiede ja taito. Influ Era –julkaisut. Helsinki: Arena-Innovation Oy.

Hotblack. Morguefile.com. Cited 11 Oct 2019. Available at https://morguefile.com/photos/morguefile/15/carrots coriander/pop

Iannuzzi, A. 2011. Greener Products: The Making and Marketing of Sustainable Brands. Boca Raton: CRC Press.

Id, V. & Laaksonen, P. 2012. Tavoitteena ympäristöystävällisemmät rutiinit: Motiiviperustaisen viitekehyksen rakentaminen. Kulutustutkimus. Nyt. 1/2012, 42-59.

Jackson, T. 2005. Live Better by Consuming Less? Journal of Industrial Ecology, Vol 9, Num 1-2, 115-128.

Jenks, C. 1998. Introduction. Core Sociological Dichotomies. London: SAGE Publications, 1-7.

Järvikoski, T. (2009). Ympäristösosiologian teoriakamppailuja. In Massa, I. (Eds.) Vihreä teoria. Ympäristö yhteiskuntateorioissa. Helsinki: Gaudeamus, 78-101.

Järvinen, E. 2016. Argh! Suomen Kuvalehti 19/16, 21-27.

Kahle, L. R. & Gurel-Atay, E. 2014. Introduction to the Psychology of Communicating Sustainability. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc.

Kapitan S., Bhargave R., Trask K., Sundie J. M. & Silvera D. H. 2014. Product End-of-Life Decisions. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc., 56-70.

Kondo, M. 2014. The Life Changing Magic of Tidying Up: The Japanese Art of Decluttering and Organizing. Berkeley: Ten Speed Press.

Korteniemi,K. 2009. Paul Shepard ja ekologinen primitivismi. In Massa, I. (Eds.) Vihreä teoria. Ympäristö yhteiskuntateorioissa. Helsinki: Gaudeamus, 167-190.

Kovács, G. 2009. Joseph A. Schumpeter, Ympäristöoptimismi ja teknologian sosiologia. In Massa, I. (Eds.) Vihreä teoria. Ympäristö yhteiskuntateorioissa. Helsinki: Gaudeamus, 191-217.

Kuijer, L. 2018 Practices-orientated design. Design for Behaviour Change. Theories and Practices of Designing for Change. Niedderer, K., Clune, S. & Ludden, G. (toim.). Abingdon: Routledge, 116-127.

Kuijer, L. 2014. Implications of social practice theory for sustainable design (Doctoral dissertation). Delft University of Technology, Delft, the Netherlands.

Kälviäinen, M. 2019. Green Design as Service Design. In Miettinen, S. & Sarantou, M. (Eds.) Managing Complexity and Creating Innovation through Design. Abingdon: Routledge, 100-133.

Kälviäinen, M. 2015. Käyttäjätietoa ympäristömyötäisen muotoilun lähtökohdaksi. In Soini-Salomaa, K. (Eds.) Ympäristömyötäistä arkikäyttöön. Lahden ammattikorkeakoulun julkaisusarja, osa 13. Lahti: Lahden ammattikorkeakoulu, 27-47.

Kälviäinen, M. 2014. Kohti ympäristömyötäisen kuluttamisen innovaatioita. Kestävä innovointi. Helsinki: Metropolia UAS, 55-81.

Kälviäinen, M. 2012. Muotoiluviestintä kehittämistä konkretisoivana voimavarana. Tiedepolitiikka 37 (3), Edistyksellinen tiedeliitto, 15-36.

Kälviäinen, M. 2002. Product design for consumer taste. In Green, W. & Jordan, P. (Eds.) Pleasure with Products. Beyond Usability. London: Taylor & Francis, 77-95.

Kälviäinen, M. & Koivisto, V. 2017. Consumers' hidden resources of goods and materials suitable for reuse. In Cura, K. (Eds.) Lahti Circular Economy Annual Review 2017. The Publication Series of Lahti University of Applied Sciences, part 31, Lahti University of Applied Sciences, 64-81. URN:ISBN:978-951-827-275-8

Kälviäinen, M & Miller, H. 2005. Visual research: means of producing shared meanings. Proceedings of Joining Forces International Conference on Design Research, UIAH, Helsinki. September 22-24, 2005. Helsinki: UIAH.

Kälviäinen, M. & Miller, H. 2004. Researching users' understanding of products: an on-line tool. In McDonagh, D., Hekkert, P., Gyi, D. & van Erp, J. (Eds.) Design and Emotion, Episode III: The Design of Everyday Things. London: Taylor & Francis, 221-125.

Laakso, S. & Lettenmeier, M. 2016. Household-level transition methodology towards sustainable material footprints. Journal of Cleaner Production 132, 184-191. DOI: 10.1016/j.jclepro.2015.03.009

Lacy, P. & Rutqvist, J. 2015. Waste to Wealth. The Circular Economy Advantage. Accenture Strategy. UK: Palgrave Macmillan.

Lee, Y., Youn, N. & Nayakankuppam, D. 2014. Sustainable Behavior and Holistic Thinking. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc., 88-103.

Lettenmeier, M. 2018. Design for One Planet – An orientation framework. A sustainable level of material footprint — Benchmark for designing one-planet lifestyles. Department of Design. Aalto University publication series DOCTORAL DISSERTATIONS, 96/2018. Helsinki: Aalto University.

Lilley, D., Wilson, G., Bhamra, T., Hanratty, M. & Tang. T. 2018. Design interventions for sustainable behaviour. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behaviour Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 40-57.

Leminen, T. & Bäcksbacka, K. 2018. 37 vinkkiä ruokahävikin vähentämiseen – näin teet edullisia hävikkiostoksia ja kokkaat keittiön kaappien tähteistä maukkaita aterioita. Helsingin Sanomat 10.9.2018.

Lockton, D. 2018. Design, behaviour change and the Design with Intent toolkit. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behaviour Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 58-73.

Lockton, D. 2013. Design with Intent. A design pattern toolkit for environmental & social behaviour change. A thesis submitted for the degree of Doctor of Philosophy. May 2013. London: School of Engineering & Design Brunel University.

Lockton, D., Harrison, D.J., Cain, R., Stanton, N.A. & Jennings, P. 2013. Exploring Problem-framing through Behavioural Heuristics. International Journal of Design Vol. 7 No. 1 2013, 37-53.

Lockton, D., Harrison, D. & Stanton, N.A. 2012. Models of the user: designers' perspectives on influencing sustainable behaviour. Journal of Design Research Vol.10 No.1/2, 7-27. doi:10.1504/JDR.2012.046137

Lockton, D & Harrison, D. & Stanton N. A. 2010. Design with Intent: 101 patterns for influencing behaviour through design. Middlesex: Equifine.

Ludden, G. 2018. Design for heathy behaviour. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behaviour Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 93-103.

Mackenzie, D. 2013. Design, Sustainability and Marketing. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 168-181.

Mannila, S. 2019. K-ryhmä tuo asiakkaalleen tiedot ruokaostosten ilmastovaikutuksista – Hiilijalanjälkimittari julkaistaan loppuvuodesta Yle Uutiset 22.8.2019. Cited 5 Oct 2019. Available at https://yle.fi/uutiset/3-10932908

Manzini, E. &Tassinari, V. 2013. Sustainable qualities. Powerful drivers of social change. In Crocker, R. & Lehmann, S. (Eds.) Motivating Change. Sustainable Design and Behaviour in the Built Environment. Oxon: Earthscan, 217-232.

Marchand, A. 2013. Why Sustainable Consumers Don't Care Much about Green Products. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 156-167.

Marchand, A., Walker, S. & Cooper, T. 2010. Beyond Abundance: Self-Interest Motives for Sustainable Consumption in Relation to Product Perception and Preferences. Sustainability 2010, 2, 1431-1447.

MARK. 2014. Tiedostava kuluttaja. Suomen Markkinointiliitto ry. Cited 5 Jan 2019. Available at https://www.markkinointiliitto.fi/sisallot/tiedostava-kuluttaja/

Markkanen, L. 2018. As my first action for #DontChoke, I pledge to stop consuming red meat as a concrete step towards minimizing my personal carbon footprint. Every move counts, play your part. Cited 30 Dec 2018. Available at Twitter #DontChoke

Mattelmäki, T. 2006. Design probes. Publication Series of the University of Art and Design Helsinki A, 69/2006. Helsinki: UIAH.

Michie, S., van Stralen, M. & West, R. 2011. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. Implementation Science volume 6, Article number: 42 (2011). Cited 18 Oct. Available at https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-6-42

Middleton, I. 2006. No such thing as a green consumer? Typology of green consumers. Robert Gordon University. Cited 22 Aug 2013. Available at http://www2.rgu.ac.uk/abs/sustainabletechnologies/typology.htm

Montazeri, S. 2013. Design for Behavior Change: The Role of Product Visual Aesthetics in Promoting Sustainable Behavior. A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy (Design Science) in the University of Michigan 2013.

Mosteller, J. 2014. The influence of visual information on environmentally significant behaviour. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc., 122-138.

msand39. Morguefile.com. Cited 29 Oct 2019. Available at https://morguefile.com/creative/msand39/1/all

Muratovski, G. 2013. Advertising, public relations and social marketing. Shaping behavior towards sustainable consumption. In Crocker, R. & Lehmann, S. (Eds.) Motivating Change. Sustainable Design and Behaviour in the Built Environment. Oxon: Earthscan, 178-197.

Nanbantoglu, M. 2018a. Tuntuuko, että mainokset lukevat ajatuksesi? Tekoäly ennustaa kuluttajan tarpeet hämmentävän tarkasti, ja tämä on vasta alkua. Helsingin Sanomat 2.10.2018.

Nanbantoglu, M. 2018b. S-kaupat avaavat asiakkaan omaan käyttöön kaiken hänen ostoksistaan kertyneen tiedon – ”Totuus voi yllättää” Helsingin Sanomat 2.10.2018.

Neuvonen, A., Wangel, J., Liljenström, C., Annala, M., Parkkinen, M., Valladares, A., Mattila, K., Vesanen, V. 2014. Smart Retro – novel way to develop cities. Helsinki: Demos Helsinki.

Niedderer, K., Clune, S. & Ludden, G. 2018. Reflecting on current applications of design for behaviour change. In Niedderer, K., Clune, S. & Ludden, G. (Eds.) Design for Behaviour Change. Theories and Practices of Designing for Change. Abingdon: Routledge, 250-260.

Niedderer, K., Ludden, G., Clune, S. J., Lockton, D., Mackrill, J., Morris, A., Cain, R., Gardiner, E., Evans, M., Gutteridge, R. & Hekkert, P. 2016. Design for Behaviour Change as a Driver for Sustainable Innovation: Challenges and Opportunities for Implementation in the Private and Public Sectors. International Journal of Design, 10(2), 67-85.

Nyrhinen, J. & Wilska, T.-A. 2012. Kohti vastuullista ylellisyyttä? Eettiset ja ekologiset trendit sekä luksuskulutus Suomessa. Kulutustutkimus. Nyt. 1/2012. Kulutustutkimuksen Seura Ry, 20-41.

Open IDEO. 2018. How might we dramatically reduce our waste by transforming our relationship with food? Cited 5 Jan 2019. Available at https://challenges.openideo.com/challenge/food-waste/top-ideas

Ottman, J. A. 2011. The New Rules of Green Marketing. Strategies, Tools, and Inspiration for Sustainable Branding. Sheffield: Greenleaf Publishing Limited.

Paivio, A. 2010. Dual coding theory and the mental lexicon. The Mental Lexicon, Volume 5, Number 2, 2010, 205-230(26).

Paloviita, A. 2010. Consumers’ Sustainability Perceptions of the Supply Chain of Locally Produced Food. Sustainability 2010, 2, 1492-1509.

Parsons, A. G., Soo, S. & Berth, N. 2014. Sustainability: Is perception as good as reality? In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc., 25-42.

Partidario, M. R., Vicente, G. & Belchior, C. 2010. Can New Perspectives on Sustainability Drive Lifestyles? Sustainability 2010, 2, 2849-2872.

Power, K. & Mont, O. 2010. The Role of Formal and Informal Forces in Shaping Consumption and Implications for Sustainable Society: Part II. Sustainability 2010, 2, 2573-2592.

Puohiniemi, M. 2011. Arvot, asenteet ja ympäristönsuojelu. In Harju-Autti, P., Neuvonen, A. & Hakkarainen, L. (Eds.) Ympäristötietoisuus. Ympäristöministeriö. Helsinki: Rakennustieto Oy, 31-48.

Re: Thinking Consumption. 2012. Consumers and the Future of Sustainability. BBMG, GlobeScan, SustainAbility.

Russel, M. G., Flora, J., Strohmaier, M., Pöschko, J., Perez, R., Yu, J., Smith, M.A. & Rubens, N. 2014. Semantic analysis of Energy-Related Conversations in Social Media: A Twitter Case Study. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc., 223-24.

Ryan, C. 2013. Critical Agendas: Designing for Sustainability from Products to Systems. In Walker, S. & Giard, J. (Eds.) The Handbook of Design for Sustainability. London: Bloomsbury Publishing Pld., 408-427.

Salo, m. & Nissinen, a. 2017. Consumption choices to decrease personal carbon footprints of finns. Reports of the finnish environment institute 30 | 2017.

Salomaa, M. 2019. Helsingin yliopiston ravintolat lopettavat naudanlihan tarjoilun. Helsingin Sanomat 15.10.2019.

Salonen, A., Fredriksson, L., Järvinen, S., Korteniemi, P. & Danielsson, J. 2014. Sustainable consumption in Finland – the phenomenon, consumer profiles and future scenarios. International Journal of Marketing Studies 6(4), 59-82.

Samson, A 2015. The Behavioral Economics Guide 2015. Cited 9 Sep 2015. Available at http://www.behavioraleconomics.com

Schwartz, S. H. 2012. An Overview of the Schwartz Theory of Basic Values. Online Readings in Psychology and Culture, Unit 2 article 11.

SCORAI 2013. Sustainable Consumption Research and Action Initiative. Abstracts. The Future of Consumerism and Well-Being in a World of Ecological Constraints. Clark University. Worcester, MA, USA, June 12-14, 2013. Cited 28 Apr 2013. Available at http://scorai.org/wp-content/uploads/3.-Abstract-Booklet-May-28.pdf.

Selvefors, A., Pedersen K. B. & Rahe U. 2011. Design for sustainable consumption behavior: systemising the use of behavioural intervention strategies. Proceedings of DPPI 11, the 5th conference on Designing Pleasurable Products and Interfaces. Milan: ACM Press.

Selvefors, A., Renström, S. & Strömberg, H. 2014. Design for Sustainable Behaviour: A Toolbox for Targeting the Use Phase. Eco-design tool conference, May 14-15 2014, Gothenburg, Sweden.

Sheenan, K. B. 2014. The Many Shades of Greenwashing: Using Consumer Input for Policy Decisions Regarding Green Advertisements. In Kahle, L. R. & Gurel-Atay, E. (Eds.) Communicating sustainability for the green economy. Society for Consumer Psychology. Armonk, NY: M.E. Sharpe Inc, 43-55.

Shu, L.H., Duflou, J., Herrmann, C., Sakao, T., Shimomura, Y., De Bock, Y. & Srivastava, J. 2017. Design for reducing resource consumption during the use phase of products. CIRP Annals – Manufacturing Technology 66 (2017), 635-658.

Sitra. 2017. 100 fiksua arjen tekoa. Cited 3 Mar 2018. Available at https://www.sitra.fi/hankkeet/100-fiksua-arjen-tekoa/

Sitra, Palmu. 2018. FIKSU KULUTTAMINEN SUOMESSA Motivaatioprofiilit apuna liiketoiminnan suunnittelussa Cited 2 Aug 2018. Available at https://media.sitra.fi/2018/02/01094922/fiksu-kuluttaminen-suomessa-2018-0201.pdf

Skill, K. & Gyberg, P. 2010. Framing Devices in the Creation of Environmental Responsibility: A Qualitative Study from Sweden. Sustainability 2010, 2, 1869-1886.

Sohn, M. & Nam, T-J. 2015. Understanding the attributes of product intervention for the promotion of pro-environmental behavior. A framework and its effect on immediate user reactions. International Journal of Design, 9(2), 55-77.

Spaargaaren, G. & Oosterveer, P. 2010. Citizen-Consumers as Agents of Change in Globalizing Modernity: The Case of Sustainable Consumption. Sustainability 2010, 2, 1887-1908.

Spangenberg, J. H., Fuad-Luke, A. & Blincoe, K. 2010. Design for Sustainability (DfS): the interface of sustainable production and consumption. Journal of Cleaner Production 18 (2010) 1485-1493.

Stickdorn, M, Lawrence, A, Hormess, M. & Schneider, J. 2017. This is service design doing. Applying Service Design Thinking in the Real World. A Practitioners' Handbook. Sebastopol, CA: O'Reilly Media.

Stylianou, N., Guibourg, C. & Briggs, H. 2018. Climate change food calculator: What's your diet's carbon footprint? BBC News Science & Technology 13.12. 2018.

Sustainable Brands. 2019. European CEOs Identify 5 'Jobs to Be Done' to Foster Enduring, Sustainable, Inclusive Growth Model. Cited 10 Oct 2019. Available at https://sustainablebrands.com/read/leadership/european-ceos-identify-5-jobs-to-be-done-to-foster-enduring-sustainable-inclusive-growth-model/?utm_source=newsletter&utm_medium=email&utm_campaign=nl_191017

Sustainability 2010. Sustainability 2. Cited 15 Mar 2013. Available at www.mdpi.com/journal/sustainability

Tan, L. B. & Johnstone, M- L. 2011. Barriers to Being Green. 2011 ANZMAC Conference Proceedings. Australian and New Zealand Marketing Academy.

Terveyden ja hyvinvoinnin laitos. 2019. Stop Diabetes - tiedosta ratkaisuihin -tutkimushanke (StopDia). Cited 10 Oct 2019. Available at https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/stop-diabetes-tiedosta-ratkaisuihin-tutkimushanke-stopdia-

The Consumption dilemma 2011. Leverage Points for Accelerating Sustainable Growth. World Economic Forum.

Thaler, R. H. & Sunstein, C. R. 2008. Nudge: Improving decisions about health, wealth and happiness. New Haven, CT: Yale University Press.

Tischner, U. & Stebbing, P. 2015. AWARENESS - DESPAIR – DESIGN – CHANGE – CELEBRATE. In Stebbing, P. & Tischner, U. (Eds.) Changing Paradigms: Designing for a Sustainable Future. 1st Cumulus Think Tank Publication. Helsinki: Aalto University School of Arts, Design and Architecture, 317-327.

Toxboe, A. 2018. Add psychology to your web design. Cited 3 Mar 2018. Available at https://shop.ui-patterns.com/product/persuasive-patterns-card-deck/

TrendWatching. 2018. WeWork co-working solution. Innovation of the Day. TrendWatching 5.12.2018.

Tukker, A., Cohen M.J., de Zoysa, U., Hertwich, E., Hofstetter, P., Inaba, A., Lorek, S. & Sto, E. 2006. The Oslo Declaration of Sustainable Consumption. Journal of Industrial Ecology, Volume 10, Number 1-2, 9-14.

Vegemessut 2019. Cited 20 Sep 2018. Available at https://www.facebook.com/vegemessut/

Vezzoli, C. 2013. System design for sustainability. The challenge of behavior change. In Crocker, R. & Lehmann, S. (Eds.) Motivating Change. Sustainable Design and Behaviour in the Built Environment. Oxon: Earthscan 276-290.

White, K. & Habib, R. 2018. SHIFT – A review and framework for encouraging

Environmentally sustainable consumer behaviour. Sitra Studies 132. Helsinki: Sitra. Cited 8 Aug 2018. Available at https://www.sitra.fi/julkaisut/shift/

Young, W., Hwang, K., McDonald, S. & Oates, C. J. 2010. Sustainable consumption: green consumer behavior when purchasing products. Sustainable Development, Volume 18, Issue 1, January/February 2010, 20–31.

Zaltman, G. 1997. Rethinking Market Research: Putting People Back In. Journal of Marketing Research, Nov 1997, 424– 437.

The publication user-driven environmentally responsible service design has been originally published in Finnish as part of the Askel – Sustainable Housing Services project. The aim of the Askel project was to create service examples for the circular and sharing economy that help companies develop their own business towards low carbon solutions and to produce services that target a communal neighborhood or a community of apartment buildings. The project was funded by the Regional Council of Päijät-Häme.

The materials of this publication from user and socio-cultural consumption research and behavioural psychology serve as tools for the development of the service processes of the Circular and Sharing Economy allowing the change to environmentally efficient consumption. The materials include content and ways of changing practices for the development of environmentally efficient service processes, strategies for embedding the solutions in the everyday life of the consumers, and individual service moments and contact points that support the consumers' environmentally efficient everyday operations.

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