



INARI AALTOJÄRVI

Making Domestic Technology Meaningful

From purification to emotions



ACADEMIC DISSERTATION

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INARI AALTOJÄRVI

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In Tampere, 8 July 2014

Inari Aaltojärvi

Abstract

Modern homes are full of various domestic appliances and technological infrastructure. These technical objects could be said to cohabit with us, affecting our everyday routines, social roles, identities, emotional experiences, and our relationships with family members and other people. This research focuses on how people categorise and ascribe meanings to everyday domestic devices and in what kinds of contexts and frames this ascribing happens. My aim is to show that technological objects are not only purely functional devices, but that they form a larger part of our mundane lives and are intertwined with social relationships, emotions, and cultural categories and contexts. Furthermore, I consider how the design of future technologies such as smart homes and smart technologies could benefit from such social scientific knowledge of material culture.

This study belongs to the fields of material culture studies and sociological science and technology studies (STS). The empirical data consists of 20 in-depth interviews with heterosexual couples. The main theoretical – and at the same time analytical – concepts explored in this study are those of purification and hybridisation (Latour 1993), the notion of home, and material culture.

Bruno Latour (1993) writes about "purification" and "hybridization". The former term refers to a clear distinction between nature/science and society/self, while the latter describes the hybrid mixtures of objects and subjects; nature and sociality. Purification and hybridisation form the analytical thread of this study, which concludes that the process of making meaning of domestic technology follows the continuum between purification and hybridisation.

The first analytical chapter of the study addresses the purification of technology and shows how people try to keep technologies in the "right" place in the normative order of things and people. It is argued that the purification is a culturally and socially preferable attitude toward domestic appliances, which stems from the technological

threats conveyed by the media. When people purify technology, they talk about domestic appliances as "just technology", as something that has lower value than humanity and sociality. This "just talk" is used to position technology under human control. Moreover, people use three "discourses of control" that are part of purification in order to soften and manage the threat of technology: control of money and technical features; control of energy (sustainable development); and control of time (activity demand). People use these discourses to put the technical objects in their right place, but also to maintain and express the ethical and moral self, compared with other, less responsible consumers.

The second analytical chapter explores the contradictory but co-existing process in purification, that is, the process of hybridisation. This chapter shows how the interviewees' social relationships and associations with other important people influence the meanings of domestic technologies. Domestic appliances are discussed by using a "conjugal we", which means that the partner and her/his actions are actively reflected upon as the interviewee ascribes meanings to domestic technologies. In the analysis, the interviewees' accounts, which were used to describe their own and their partners' actions concerning domestic appliances, illustrated the sociological concept of the gift and its tenet of reciprocity. In a nutshell, the interviewees attempted to balance their actions in such manner that a family member's act is returned by another act, or at least acknowledged and appreciated. As with the gift-giving, this furthers an organic and functioning social unit, that is, the family. In many cases, however, finding the balance remains only an ideal state and falters easily. For instance, one minor change in technology at home or inhabitant's life affects the everyday routines with technologies, requiring the formation and founding of a new kind of balance and reciprocity. In addition to partners, child-parent relationship and friends affect the ways in which people ascribe meaning to domestic appliances.

The third analytical chapter concentrates on emotional responses to domestic technology. Emotions are often considered antonymous for rationality (and for the purification of technology), but I show that emotions are very much present when people act with technologies and refer to them when discussing their life. There is a tight relationship between the emotions of frustration/irritation and joy/pleasure, which was highly discernible in the interviews. Broken appliances or devices that are

hard to use and negative feelings connected to them were given priority in the interviews as "the role of technical objects is to work". The purification of technology seems to set a "feeling rule of no feelings" when people talk about their relationships with domestic appliances. In other words, people do not feel comfortable with mixing technical objects and emotions in their accounts. However, the more they reflect on the issue, the more they start to narrate how domestic appliances may actually enhance their sense of companionship and offer entertainment and therefore positive emotions. Further, this chapter also introduces the concept of narrative and discusses how emotions are linked to domestic appliances from the point of view of narrative.

Making meaning of domestic technology is pursued at three contextual levels: cultural, practical and material. The cultural level includes the strongest purification of technology, whereas at the practical and material levels people express hybridisation, mixing social elements (social relationships and emotions) with technologies. Put differently, at the cultural level, technologies are commonly talked about in an abstract and ideal sense, but at the practical level, they are ascribed meaning to within the everyday practices and social relationships, including the material outlook of domestic technologies. There is thus a continuum between the acts of purification and hybridisation, and the meaning-making differs when the view is closer to the furthest end of purification, and vice versa. The process of making meaning of domestic appliances is relational, meaning that it depends on the context in which they are discussed. As a result, there are diverse settings where people try to organise domestic appliances in their minds and practically in their homes. At the same time, it becomes clear that domestic appliances have a power to organise people, their time spent at home, and several domestic places where they operate.

The final part of the research exemplifies how social scientific knowledge gathered in the study could be applied to the design of future domestic technology and smart homes. First, it is argued that the purification of technology does not merge with the idea of total automation and invisibility of ubiquitous computing, because the most important feature of domestic technology is that it should be under control. In line with purification, the users should be able to think and feel that they are the masters of domestic appliances. Total automation clashes with the idea of purification as it denotes that technologies live their own lives and are not controlled by the users,

but the users are controlled by technologies. Second, intelligent agents in smart systems seem more like humans, while people have to take the role of being "thing-like", being monitored and steered. Once again, this is incompatible with the notion of purification where sociality and people are considered more valuable than technology. Third, aesthetic issues have not been taken into account in new innovations in technology, although the aesthetic appearance of objects is an important feature when devices are made part of the home environment. In addition, the concept of home is not properly understood in the design of future domestic technology. Particularly the intimate nature of homes and the privacy of familial relationships should be respected in design. Finally, the role of emotions in design is inadequately considered. Emotions are part of everyday practices with domestic appliances, and they come in many forms, which means that the measurability should not be the only view on emotions in design. All in all, the technological design of future domestic technology should widen its perspectives so that it could benefit from social scientific views. What is more, scholars in social sciences should likewise alter their views to go beyond non-empirical criticism.

Tiivistelmä

Kodit ovat täynnä teknisiä laitteita ja infrastruktuureja, jotka vaikuttavat jokapäiväisiin rutuineihin, sosiaalisiin rooleihin, identiteetteihin, tunteiden kokemiseen ja vuorovaikutussuhteisiin perheenjäsenten sekä muiden ihmisten kanssa. Tutkimuksessa kysytään, miten ihmiset luokittelevat ja merkityksellistävät kodin teknologisia laitteita ja minkälaisissa kehyksissä tämä merkityksellistäminen tapahtuu. Tarkoitus on osoittaa, etteivät kodin teknologiat ole ainoastaan funktionaalisia laitteita, vaan ne muodostavat suuren osan arjesta ja ovat tiiviisti yhteydessä tunteisiin, sosiaalisiin vuorovaikutussuhteisiin, kulttuuriin luokituksiin ja konteksteihin. Lisäksi pohditaan, miten tämän kaltaista sosialitieteellistä tutkimustietoa voitaisiin käyttää hyväksi kodin teknologoiden suunnittelussa. Esimerkkitapauksena käytetään älykoteja sekä koteihin suunnattuja älykkäitä sovelluksia.

Tutkimus kuuluu materiaalisen kulttuurin ja sosiologisen tieteen- ja teknologiantutkimuksen piireihin. Aineistona on 20 heteropariskunnan haastattelua, ja teoreettisina sekä analyyttisina käsitteinä on käytetty etäännystäminen-sekoittaminen-ideaa (Latour 1993, purification-hybridization), kodin käsitettä ja materiaalista kulttuuria.

Bruno Latour (1993) kirjoittaa etäännystämisestä ja sekoittamisesta. Etäännystämisellä viitataan Latourin englannin kieliseen termiin ”purification” ja sekoittamisella tarkoitan Latourin termiä ”hybridization”. Ensimmäinen termi tarkoittaa selvää rajantekoa luonnon/tieteen ja yhteisön/ihmisen välillä ja toinen kuvaan hybridejä, joissa objekti sekoittuu subjektiin ja luonto sosiaaliseen. Etäännystäminen ja sekoittaminen ovat tutkimuksen analyysin punainen lanka ja osoittavat, miten kodin teknologioita merkityksellistään tämän kahtiajan ja jatkumon kautta.

Ensimmäisessä analyysiluvussa käsitellään teknologoiden etäännystämistä ja kuvillaan, miten haastateltavat osoittavat kodin teknologisille laitteille "oikean paikan" ihmisten ja objektienvärisessä järjestyksessä. Etäännystäminen on sosiaalisesti määräytynyt asenne teknologioita kohtaan ja se kumpua teknologista uhista, joita mediassa yleisesti käsitellään. Kun kodin laitteita etäännystetään, niistä puhutaan "vain teknologiana", jolloin niille samalla osoitetaan alempi rooli suhteessa ihmisiin. Etäännystämisen yleisin muoto ilmenee niin sanotuissa kontrollidiskursseissa, joita ovat rahan ja teknisten ominaisuuksien kontrollointi, energian kontrollointi (kestävä kehitys) ja ajan kontrollointi (aktiivisuusvaade). Näitä diskursseja käytetään, kun halutaan painottaa teknologian alisteista roolia suhteessa ihmisiin. Toisaalta niiden avulla ilmaistaan myös omaa moralista ja eettistä asennetta suhteessa teknologoiden kuluttamiseen ja käyttämiseen.

Toisessa analyysiluvussa käsitellään etäännystämiselle vastakkaisista teknologoiden merkityksellistämistapaa eli sekoittamista. Sekoittamisessa kodin teknologoiden merkityksellistäminen on sosiaalisesti väritynyttä, ja kodin laitteille annettuihin merkityksiin kietoutuvat haastateltavalle tärkeät ihmiset ja ihmisiin. Kodin laitteista ja niihin liittyvistä rutuineista puhutaan muodossa "me" tai "hän", jolloin merkityksellistämisprosessissa viitataan ennen kaikkea parisuheteeseen tai puolisoon ja hänen teknologiovälitteiseen toimintaansa tai asenteihinsa. Haastateltavien puheessa ilmenee sosiologisen lahjan käsitteen vastavuoroisuuden periaate. Vastavuoroisuuden ajatus arjen teknologiovälitteisessä toiminnassa tiivistyy balanssin ideaaliin. Se tarkoittaa, että kun puoliso tekee jotain, niin toinen vastavuoroisesti tekee jotakin muuta, tai ainakin huomioi ja arvostaa puolison näkemää vaivaa. Kuten sosiologisen lahjan yhteydessä, tämä vastavuoroisuus tiivistää sosiaalista perheyksikköä ja tuo sen jäseniä lähemäksi toisiaan. Perheyksikön balanssi-ideaali on kuitenkin ennen kaikkea ideaali ja sen saavuttaminen ja/tai ylläpitäminen on vaikeaa. Esimerkiksi kotiin hankittava uusi teknologinen laite tai perheenjäsenen/-jäsenten elämänmuutos vaikuttaa arkisiin rutuineihin, jolloin myös vastavuoroisuusperiaatteet ja niiden avulla saavutettava balanssin ideaali tulee neuvoella uudelleen. Puolison ohella kodin teknologoiden merkityksellistämisprosesseihin vaikuttavat myös lapsi-vanhempisuhde sekä ystävät.

Kolmannessa analyysiluvussa tarkastellaan tunteita ja niiden yhteyttä kodin teknisiin laitteisiin. Tunteita pidetään yleisesti rationaalisuuden vastakohtana, mutta tässä tutkimuksessa painotetaan niiden roolia sekä kodin teknologoiden kanssa toimiessa että niistä puhuttaessa, ja tunteet voivat myös olla tärkeä osa rationaalista toimintaa. Haastatteluissa painottuvat tunteiden luokitteleminen ja ärsytyksen/turhautumisen ja ilon/viihteen väliset jännitteet. Puutteellisesti toimivat tai rikkinäiset laitteet ja niihin liittyvät negatiiviset tunteet tuodaan ensisijaisesti esiin, koska "teknisten laitteiden rooli kotona on toimia". Teknologian etäännystämisen mukaisesti tunteiden ilmaisussa vaikuttaa niin sanottu "tunnesääntö" (feeling rule), jonka mukaisesti tunteita ei sotketa teknologiisiin laitteisiin. Toisin sanoen kodin teknologoiden ja tunteiden sekoittaminen ei tuntunut haastateltavista luontevalta. Mitä kauemmin aihetta haastatteluissa kuitenkin käsiteltiin, sitä enemmän haastateltavat alkoivat tarinoida, miten tekniset laitteet saattava edesauttaa ja ylläpitää sosiaalisia suhteita ja/tai tuottaa viihdettä ja tästä kautta positiivisia tunteita. Luvun lopussa myös esitellään narratiivin käsite ja pohditaan kodin teknologiaan liittyviä tunneilmaisuja narratiivin kautta.

Kodin teknologoiden merkityksellistäminen tapahtuu kolmella tasolla: kulttuurisella, praktisella ja materiaalisella. Vahvin teknologian etäännystäminen esiintyy kulttuurisella tasolla, kun taas praktisilla ja materiaalisilla tasoilla ilmennetään yleisesti teknologoiden sekoittamista, jossa sosiaaliset elementit (ihmissuhteet ja tunteet) sekoittuvat teknologoiden merkityksellistämiseen. Kulttuurisella tasolla kodin teknologioista puhutaan usein abstraktisti ja idealisti. Praktisella tasolla merkityksellistäminen tapahtuu arjen rutuineihin ja sosiaaliisiin suhteisiin viittaamisen kautta, ja usein tähän liittyy myös teknisten laitteiden ulkonäkö ja materiaaliset ulottuvuudet. Etäännystämisen ja sekoittaminen ovat siis ennen kaikkea jatkumo, ja kodin laitteiden merkityksellistäminen muuttuu, mikäli merkityksellistämisen lähtökohta on lähempänä etäännystämistä tai sekoittamista. Teknologoiden merkityksellistäminen on täten relationaalista. Tämä tarkoittaa, että se on riippuvainen kontekstista ja merkityksellistämistasosta. Tästä syystä merkityksellistäminen on myös tilanteista. Ihmiset järjestelevät kodin teknisiä laitteita mentaaliseksi, diskursiiviseksi sekä praktiseksi, ja samanaikaisesti kodin teknisillä laitteilla on kyky järjestellä ihmisiä ja heidän ajan- sekä tilankäytööän kotiympäristössä.

Tutkimuksen lopussa esitellään älykotiesimerkin kautta, miten sosiaalitieteellistä tietoa voitaisiin käyttää hyväksi tulevaisuuden kodin teknologoiden suunnittelussa. Ensimmäiseksi osoitetaan, ettei teknologian etäännystäminen sovi yhteen "jokapaikan tietotekniikka" -käsitteen (ubiquitous computing) kanssa. Teknologian etäännystäminen kiteytyy teknologian hallittavuuden ajatuksessa. Ihmisten tulee voida ajatella ja tuntea, että he hallitsevat teknologisia laitteita kotiympäristössään. Tulevaisuuden jokapaikan tietotekniikka on visioissa usein täysin automaattista ja näkymätöntä, joka aiheuttaa tunteen siitä, että teknologia hallitsee ihmisiä. Toiseksi älykotivisioissa synnyttää ongelmia subjektin ja objektin välinen ristiriita. Älykkäiden sovellusten itseohjautuvat älykkääät prosessit (intelligent agents) vaikuttavat ihmisten kaltaisilta, omalakisilta ja sosiaalisilta toimijoilta, jolloin älykkäiden teknologoiden käyttäjille jäi objektin tyypin asema, jossa ollaan näiden teknisten prosessien valvonnassa ja ohjailun kohteina. Automaattisen teknologian lisäksi tämä on vahvassa ristiriidassa teknologoiden etäännystämisen kanssa, jossa on lähtökohtana ihmisten ja heidän toimijuuutensa painottaminen suhteessa teknisiin laitteisiin ja sovelluksiin. Kolmanneksi teknologisten objektien esteettinen olemus on melkein kokonaan unohdettu uusissa innovaatioissa, vaikka laitteiden ulkonäkö on tärkeä seikka niiden kotiympäristöön sopeuttamisessa. Neljänneksi kodin käsitettä ei ole tarpeeksi syvästi ymmärretty tulevaisuuden teknologoiden suunnittelussa, joka tarkoittaa, että suunniteltavat sovellukset eivät ole sopusoinnussa niiden loppusijoituksen eli kodin kanssa. Erityisesti kotitalan yksityinen luonne ja perheen välisten sosiaalisten vuorovaikutussuhteiden intiimiys eivät näy älykkäissä sovelluksissa. Myös tunteiden rooli kodin teknologoiden suunnittelussa on vajavaista. Kuten tässä tutkimuksessa on osoitettu, tunteet liittyvät teknologiavälitteisiin arjen rutuineihin ja ne ovat moniulotteisia, sekä käytännössä että niistä puhuttaessa. Tämä tarkoittaa, että tunteiden mitattavuuden ja määrällisyden ei tulisi olla ainoa tieteellinen lähestymistapa uusia kodin sovelluksia suunniteltaessa. Yleisesti sanoen älykotien ja älykkäiden sovelluksien suunnittelun tieteellistä lähtökohtaa olisi hyvä laajentaa, jotta myös laadulliset sosiaalitieteelliset menetelmät voisivat tuoda oman osansa ja näkemyksensä suunnitteluprosessiin. Luonnollisesti tämä tarkoittaa myös sitä, että sosiaalitieteilijöiden olisi hyvä miettiä omia lähtökohtiaan laadullisen teknologiatutkimuksen tekemisessä, eikä turvautua ainoastaan ei-empiriiseen teknologiavisioiden kritisoimiseen.

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1 Introduction and Contents of the Study

Tumble outta bed
And I stumble to the kitchen
Pour myself a cup of ambition

(Dolly Parton: 9 to 5)

1.1 Introduction

One ordinary spring day I went to buy a new vacuum cleaner with my partner. I was not very excited about this occasion; our main aim was to find a reasonably priced and sufficiently effective domestic device. The vacuum cleaner as such did not evoke any positive – or negative – feelings in me. To be honest, I was not even the one who would use it. I did sometimes vacuum, but it was usually my partner's chore, so my opinion on the vacuum cleaner was secondary to that of the real user.

Despite our lack of enthusiasm, we had familiarised ourselves in advance with some advertisements. We knew how much we were prepared to pay for the item and had a rough idea about the features it should contain. Given this, the purchase was meant to be fast: we enter the shop, choose what we want, pay for it, and go home.

However, the transaction turned out to be less simple because in the shop I saw the most beautiful domestic appliance I had ever seen. It was a red Moccamaster, the Rolls Royce of the filter coffee makers. First, I noticed its unusual colour. It was such a shiny red, my favourite colour, that it immediately caught my attention. Only then did I realise it was a Moccamaster, the brand I had been taught to interpret as a sign of quality. My grandmother had used her Moccamaster for decades, and there is one in almost every staff break room at Finnish workplaces. In addition, its price seemed to imply its superior nature. Moccamasters are expensive in comparison with other filter coffee makers.

Having noticed that "red beauty", I could not get over it. I decided that I have to have one, no matter what. Fortunately, my partner had common sense and suggested I could have my red Moccamaster, but only if I would take care of the vacuuming in the future – with the vacuum cleaner that was old, lousy and almost impossible to use. His reasonable ultimatum made me think. I certainly knew our budget was not big enough to buy both devices. I had to choose whether I wanted the red Moccamaster and the agonising vacuuming, or whether I would settle with the current coffee maker and let my partner continue to vacuum but with a better vacuum cleaner. Well, you could say that I am a lazy cleaner because we ended up buying the vacuum cleaner.

Even though I admitted that purchasing the vacuum cleaner was the "right" and decent thing to do at that time and one Moccamaster would not have made me happy in the long run, I still continued to dream about the red coffee maker. The urge persisted so that I even started to talk about it to my friends. I did not, and still do not, understand what had happened to me. Against all the odds, I had started to obsess about a coffee maker. At this point, you have probably guessed that after some months I managed to buy that red coffee maker. But was it worth it?

Actually, the coffee maker affected my life. First, being its owner made me feel mature because I had pursued a long-term investment for our home. Second, its unusual and distinctive colour, which matched the colour of our kitchen table, showed my interest in design and other aesthetic issues. Third, the red Moccamaster implied, or so I unconsciously thought, that I appreciated quality over quantity. And yes, some mornings I still have to give a few admiring glances at the coffee maker because its design is such a pleasure to look at. Bearing all this in mind, a coffee maker is not only a coffee maker. It is something much more.

Why do I want to share this story? After a careful reflection on my own behaviour, I realised that this particular event succeeds in pinning down the complex nature of domestic appliances. They are not just "goods" that we buy or receive and then use (or in the case of bad purchases, we do not use them, and they end up in a graveyard of household appliances at the back of the kitchen cabinet). On the contrary, domestic devices are entangled in our prevailing culture: they are social in the way they represent the structures of values, attitudes, and behaviour that are embedded

in the culture around us, and in turn, they have the power to influence the culture that is constantly – although very slowly – being shaped. As I highlighted, the Moccamaster, for example, is widely recognised as a "better quality" coffee maker. It is hard to answer why this is so. Is it the higher price, or the truly better quality? It could be partly both, of course, but another answer is that the Moccamaster's cultural superiority is common knowledge in Finland. I argue that almost anyone over twenty in Finland knows what is said to be the best filter coffee maker. It is something that we just know because it has been repeated to us as a fact by advertisements, grandparents, workplaces, etc.

Accordingly, technologies and their use are not only affected by the culture but may also influence it. At a first glance, it might seem silly to ponder what kind of influence a simple coffee maker could have on a whole culture, but it is relevant in order to illustrate my point of the reciprocity of structures and actors, which can also be material objects.

1.2 Contents of the Study

This thesis is not only about the coffee maker but domestic technology in general. Particularly, my aim is to explore domestic material culture by asking:

1. HOW DO PEOPLE AScribe CULTURAL AND SOCIAL MEANINGS TO DOMESTIC APPLIANCES?
2. WHAT KINDS OF CULTURAL FRAMES AFFECT THESE MEANING-MAKING PROCESSES?
3. HOW COULD THIS KNOWLEDGE OF DOMESTIC APPLIANCES BENEFIT THE DESIGN OF FUTURE DOMESTIC TECHNOLOGY, ESPECIALLY SMART HOMES?

These are questions that tend to go rather unrecognised in social sciences although this kind of knowledge is important when trying to make sense and learn to understand the everyday lives of people. As Silva (2010, 180) writes about domesticity and technology: "Yet the technological material is so embedded in the relationality of social life, absorbed into the interstices of ordinary doing and getting about, that its full significance goes unnoticed." Domestic settings are, indeed,

usually so self-evident that they are rarely reflected upon. Bryson (2011, 21) writes about the home and domestic life that

So I thought it might be interesting, for the length of a book, to consider the ordinary things in life, to notice them for once and treat them as they were important, too. Looking around my house, I was startled and a little appalled to realize how little I knew about the domestic world around me.

This is the first rationale for this study: trying to understand the domestic life that is nowadays filled with different technological innovations. This knowledge should not be seen as significant for social sciences only, but it could also be applied within other academic fields, for instance, in human-computer interaction and the technical design of future domestic areas.

The structure of the thesis is as follows. I start with the description of the most central theories and concepts. The study belongs to the field of material culture studies, and I begin with introducing this broad and diverse academic field. I then summarise the central concepts of home, everyday life, and domestic technology. By answering the research questions, I aim at broadening and deepening the discussions about these academic fields and concepts and contemplate how the cultural understanding and meaning-making of technology could be made practical use of in the design of future domestic appliances. Thus chapter 2 could be called the framing of the research with the aim of positioning the study within the academic field of social sciences. However, hoping the research results will reach beyond the social sciences, I will consider, at the end of this research, the possibility of converting social scientific knowledge to suit the purposes of technology design.

In chapter 3, I introduce the interview data and describe the process of the data gathering. Further, I introduce and discuss the contextual framework of the qualitative interview data and its practical and analytical settings. I contemplate, for example, the questions of gender and material dispositions of the interviews.

Analytical chapters follow these preparatory sections. I have arranged the analytical chapters to comply with the main analytical and theoretical concepts of the study: Bruno Latour's notions of purification and hybridisation. I started to analyse the data with the notion of purification in my mind, but discovered that it alone was not sufficient to describe the meaning-making of domestic technology. Accordingly, I

widened the analysis to cover the very social aspects of meaning-making, that is, social relationships and emotions (hybridisation). These could be understood as ontologically different from pure purification, but so are the lives of people and the meaning-making that emerges from and is pursued in different contexts and settings. In other words, the purpose of the analysis is to discuss the most important aspects that affect the meaning-making of domestic technology, no matter how distinct these aspects seem in the theoretical sense.

The first analytical chapter, chapter 4, describes the purification of technology, the process in which the respondents put technology "in its own place", distinguished from humanity and sociality. This chapter highlights the normative and ethical discourses of technology and the fact that technology is considered different from the social aspects of life. Further, technology is actively kept at a distance and controlled as people need to think that they retain agency in terms of these objects. In chapter 4, the purification of technology is further considered in accordance with the social scientific "monster theory", the notion of "technology as a text", and the term "domestication".

Chapter 5 addresses domestic technology in social relationships. This stance moves away from the notion of clear purification introduced in chapter 4. I argue that there is no such thing as "pure" technology as technical objects enter and immerse in social relationships – however strongly they are purified. A large part of the chapter discusses the relationships between couples and how technologies are part of forming, sustaining and expressing the couple. Primarily, technical devices connect with social relationships in the decisions about their purchase, location and use. After couples, I study how technologies are given meanings in the parent-child relationships and among friends. Finally, the chapter examines the socialness of technical objects through Marcel Mauss's theory of the gift.

The third analytical chapter could be considered opposite to the process of purification as it elaborates emotions in terms of domestic appliances. In chapter 6, I argue that even though the respondents actively try to talk about technology as cold and inhuman, they often treat it as if it were human. Moreover, the reciprocal interaction with domestic technologies is prone to produce different emotions. For example, anger and irritation may surface if a device does not work. Then again,

domestic technologies sometimes mediate positive emotions as they may enable relaxation, promote social interaction and offer positive experience in the form of entertainment, for instance. Furthermore, a story of a material domestic device may be used as a medium when sharing a memory of a loss or depicting intimate emotions. The discussion in this chapter mainly focuses on the narrative aspects of objects. I also consider how the purification of technology may serve as a "feeling rule" in terms of giving meanings to domestic devices.

Finally, in chapter 7, I discuss the conclusions and their implications. After concluding and answering the research questions, I reflect on the ways the results of this study could benefit the design of future homes, smart homes in particular. I argue that smart home design is currently too technology-driven and could be enhanced and made more attractive with the design that understands the cultural and social aspects of domestic technology. Put simply, no product will be fully appreciated if the designers do not understand the people and the culture they are designing the product for. Similarly, the design processes of smart homes should be made more flexible and incorporate the users the designers wish to target.

2 Positioning the Study and Defining its Central Concepts

Buy it, use it, break it, fix it,
Trash it, change it, mail – upgrade it,
Charge it, point it, zoom it, press it,
Snap it, work it, quick – erase it,
Write it, cut it, paste it, save it,
Load it, check it, quick – rewrite it,
Plug it, play it, burn it, rip it,
Drag and drop it, zip – unzip it,
Lock it, fill it, call it, find it,
View it, code it, jam – unlock it,
Surf it, scroll it, pause it, click it,
Cross it, crack it, switch – update it,
Name it, rate it, tune it, print it,
Scan it, send it, fax – rename it,
Touch it, bring it, pay it, watch it,
Turn it, leave it, start – format it.

(Daft Punk: Technologic)

In this chapter, I position the study within the theoretical fields and introduce its most central concepts. This study belongs to the social scientific field of material culture studies; therefore, I first introduce this broad area of research that concentrates on the material side of our world and everyday life. After material culture studies, I focus on the notions of home, everyday life, and domestic technology, respectively. These concepts could be said to fall under the wide rubric of material culture studies and are an intrinsic part of material culture research on the notion of home.

There are also other theoretical concepts to be found in this study, but they are not introduced in this section. For instance, the concept of gender is relevant for this study, frequently turning up in the interviews and therefore affecting the analysis of

the data. Despite its relevance, I do not define gender in this section because it could be said to be incorporated into and shaped alongside the concepts of home and everyday life. I believe that in this study the concept of gender cannot be isolated into a single unit that is distinguished from the contexts of home and everyday life. In other words, I discuss gender when it strongly emerges from the data, but it is not the point of departure for my analysis.

The concepts discussed in this chapter are critical for the primary task of this research: finding out how people ascribe meaning to domestic appliances. Throughout this research, I stress the active construction of the meaning of objects, which are not inherently meaningful. As Kleine III & Kernan (1991, 312) point out: "Meaning is not inherent in the object itself; rather it arises from the interaction of individual, object and context"; and that "meaning perceptions of an object may differ across individuals and across situations for the same individual". Home and everyday life are part of the context affecting the meaning-making process of material objects, and they provide a frame through which the meaning-making is pursued. Naturally, there are also commercial, journalistic and educational rationales behind the meaning of technology, and sometimes the interviewees of this study echo these public discourses (see, for example, chapter 4 for technological determinism, and dystopias and utopias) (Pantz 2000, 12).

The task of defining the most relevant theories and concepts for this study is especially challenging because the concepts are closely intertwined: the definitions depend on the mutual interaction between the subjects. The concepts could be considered a sum of their "mutual shaping", and one has a tendency to affect another. As, for example, Pinch (2009, 45) argues: "technology, society, and materiality are in continuous interaction". Furthermore, meanings are constantly produced and altered. In the words of Hurdley (2006, 718): "[A]gencies of material culture, the house and the individual interact in an ongoing construction of meaning." As mentioned earlier, this study is based on the argument that all of the central concepts are in some sort of relationship with one another. Encapsulating my premises, Vannini (2009a, 3) views

[S]ociality and culture as a form of making, doing, and acting and an understanding of the world as a material presence apprehended by humans through pragmatic, sensuous intentionality. In comprehending culture as

deeply shaped by techne – that is, craft, skill, creativity – and in viewing social interaction as process rich with material properties we do not intend to either reintroduce antiquated notions of instrumentalism or essentialism. Rather, we simply intend to remark on the importance of treating everyday life as an active form of negotiation – a form of work as it were – that engages the colors, the textures, the tastes, the fragrances, the sounds, the temperature, the kinaesthetic movement, and the practical and symbolic value of the stuff that makes up life.

Despite this continuous process of mutual shaping, I argue that the starting point in the meaning-making process is never the technological object itself. Rather, technology is always social, meaning that “social arrangements” are “required or adopted to implement” technology (Harre 2002, 25). In other words, technology is essentially social, as people – their abilities and knowledge, for instance – are needed so that technology comes alive. Sociality does not stop at the innovation, though, as at that point marketers, retailers, and users, for example, come to affect the ways in which technologies are used and ascribed. In this sense, this study belongs to the field of science and technology studies, and the main principle in the background of all claims is “the social shaping of technology” (see the section on humans and “Social Shaping of Material Objects and its Connection to Purification - Hybridisation”). What most matters here is the emphasis on the social. In other words, how technology is designed and how it becomes alive is social; how technology is used is social; how it is given meanings to is social; and finally, how it is discarded is social. Essentially, the whole life trajectory and history of technology are fundamentally social. This will also be seen in the conclusions of this research as the meaning-making shifts between the pure purification and hybridisation of domestic appliances. Both purification and hybridisation are inherently social. In the act of purification, the social is actively attempted to be kept at a distance from technology as technology is considered “just” technology, yet the social emerges from the social structure and the meaning is formed from the cultural and often abstract elements. In the act of hybridisation, the social is kept closer because the meaning is constructed through the intimate circle of social relationships and our own emotional responses (this is explained in more detail under the section mentioned above).

I see this research as a collage conjoining different theoretical and thematic standpoints, and my analysis evolves from the data, meaning that I concentrate on

the most visible and tangible issues stemming from the interviews. In this sense, I follow Uotinen (2005, 12), who writes that “I see research as a conscious and articulate action in which new meanings and understandings are produced by binding different elements creatively together”.¹ The concepts introduced here could be understood as contextual elements influencing both my and the interviewees’ meaning-making. For instance, without understanding the context of home, the meanings of domestic appliances cannot be ruminated on (Mackay 1997, 263). Without context, there is no meaning (*Ibid.*, 48).

2.1 Material Culture Studies

The most essential thematic field in this study is material culture and materiality; I begin with a general introduction to this area of research. I have divided the introduction into four categories, which reflect the different viewpoints that can be used when researching material culture and objects. These are: identity and status, practices, consuming, and finally, the relationship between humans and objects that I call the social shaping of objects.

General Introduction

I have written elsewhere (Aaltojärvi 2012) that “material culture studies consist of a broad field of scholarly activities and include, among others, scholars from anthropology, sociology, psychology, and design & cultural studies (Woodward 2007, 3-4)”. To go further, Knappett (2005, 3) adds computer science, neuroscience, philosophy, and linguistics to this list of academic fields within material culture studies. My position is that objects and artefacts play a central role in our everyday lives and surrounding culture. First, they influence our mundane activities with their physical appearance and ability to restrict or enable our actions. Furthermore, objects do not only have a visible, physical essence, but they create, mediate, and sustain meanings that are linked to wider patterns in the surrounding culture. I also contend

¹ Translated from Finnish into English by IA.

that the traits of physical affordances and the symbolism of materiality convey part of the possible social identities of people and actual practices: what we feel we are or would like to be, do and can do, are largely affected by material objects (Appadurai 1986, Cieraad 1999, Dant 1999/2001/2005/2006, Miller 1998b/2001/2008, Molotch 2003, Tilley et al. 2006, Woodward 2007).

Given these multiple approaches and scholarly fields, it is almost impossible to unanimously define “material” or material culture. As Daniel Miller (2010, 1) writes:

Don’t, just don’t, ask for or expect a clear definition of ‘stuff’. (...) To try to determine the exact criteria by which some things would be excluded from stuff as perhaps less tangible, or too transient, would be a hopeless exercise. (...) Material culture is no better defined than stuff is. In practice these studies have promiscuously picked up on interesting topics and perspectives that more self-absorbed, well-defined sub-disciplines felt were outside of their brief.

Having said that, Miller (2010, 4) also argues that “the best way to understand, convey and appreciate our humanity is through attention to our fundamental materiality”, which I fully agree with. Material objects are an intrinsic part of who we are and how we understand ourselves, the others, and the world around us. In the course of the analysis in this study, this becomes clear as making meaning of domestic appliances does not stem directly from the technical objects themselves, but it involves cultural and social categories (for example good/bad consumer, gender), other people (for example children and friends), being one part of the couple, and our own emotional responses. As Woodward (2012, 671) writes about material culture:

Most of these objects have not been directly made or produced by us, but through visual, corporeal, and imaginative engagements, we negotiate and construct their meanings, using them to make ourselves and, in turn, a larger universe of meanings.

Reckwitz (2002a) identifies three main branches of the conceptualisation of materiality in the theories of culture. The first type is the classical “sociology of knowledge” wherein materiality is primarily considered a social structure acting in the background “in the realm of pre-cultural”, and steering human action and particular meaning-making (*Ibid.*, 197). Second, there are more recent theories of

culture that relate materiality to “classification systems, discourses or language-based interaction”, and these stances treat material objects “as carriers of meaning” (*Ibid.*, 202). Summarising such thinking, Reckwitz (*Ibid.*, 206) writes that “the material world thus appears as the plane of objects to be known or to be observed, to be talked about or to be interpreted, each time constructed by cultural codes”. In this sense, technological objects can be treated as texts, and they are “encoded” meaning and ways of use by designers and marketers, and “decoded”, that is, “read by their consumers”. However, sometimes these “preferred readings” by designers and marketers are read differently by the targeted users, as “any text is, to some extent, polysemic” (Mackay 1997, 269-270). In Reckwitz’s division, Bruno Latour represents the final way to conceptualise materiality. Latour writes about “symmetrical anthropology”, meaning that material things should be seen as necessarily participating in social practices. “Neither the material world nor a social world of meanings or power relations, can be taken for granted as a seemingly certain point of departure.” (Reckwitz 2002a, 208) In this view, also the non-human actants take part in social practices, and their material aspects affect how they could be handled.

Kien (2009, 28), for his part, writes that “[t]he term material culture is used to describe ‘person-thing’ relationships and those things in use”. Importantly, in order to refer to material objects, I simultaneously and interchangeably use the words “object” and “thing”. In general, I follow Harre (2002, 23), who describes material object as “a non-living individual that occupies space and time, and is capable of interacting with human beings”. The key here is in the interaction, and the fact that objects are in a reciprocal interaction with people. We, humans, interact with things, for example, by ascribing social meanings to them, but objects also interact with us, humans, for instance by directing our actions. As Harre (2002, 32) remarks, social order – and therefore also material objects – are twofold: they are at the same time practical as well as expressive.

The symbolic nature and ability of material culture to serve “as a medium of visual communication” are acknowledged especially in anthropological studies addressing anthropological and historical objects (Stott & Reynolds 1987, 2). Anthropologists have taken this stance quite far by stating that material culture studies in archaeology should not only focus on contextual settings of meaning-making, but instead, “things might be treated as *sui generis* meanings”, and “meanings are not ‘carried’ by things,

but just are identical to them” (Henare et al. 2007, 3-4). My approach to materiality is not that rigid as my aim is to investigate the verbal accounts on domestic appliances offered by the interviewees. Worth highlighting here is the dynamic role of humans in terms of devices. As the results of this research show, people are active producers of meanings: they do not “just” consume and use technologies (De Certeau 1984, Money 2007, 373). It has been argued that material objects have social lives. Despite their seemingly inanimate nature, they have lives and personhood, too, and they can, for example, have cultural biographies just like humans (Kopytoff 1986, Appadurai 1986).

The process of “objectification” seems to be in the core of material culture studies. Vannini (2009a, 2) describes that objectification is something “through which humans shape, and are shaped by, the materiality of life”. Put differently, people influence and are influenced by materiality, and this interaction is processual and ongoing in nature. Tilley (2006, 60) captures objectification by writing that it is “the manner in which objects or material forms are embedded in the life worlds of individuals, groups, institutions or, more broadly, culture and society”. In other words, people make, use, consume, discard, interact, and live with material things. They are not just instrumentally used, but they intertwine with our worlds and culture. Sometimes even the most mundane and taken-for-granted object may be the one that can tell us something about its owners and the world around it. This is demonstrated, for instance, by Dant (2001), who has written an interesting cultural biography about the fruitbox/toolbox: its history, use, and trajectory of life. To quote Dant (2001, 24): “The object of the fruitbox/toolbox is tied into a particular life in a particular culture and a particular time. It begins to provide a way of understanding something of those particularities because of the ways it has been intertwined with human lives; it is not an object simply lying on or under the earth.”

“Appropriation” is a term similar to objectification as it encapsulates the process of making an object one’s own. Ilmonen (2004, 36) writes about appropriation and explains that it starts when an object is purchased or received. The next step is to “internalize” the object, and this is pursued by externalising and transferring “our desires, inner feelings and social relations to objects”. Appropriation is prone to include emotional elements. If the internalisation process continues and our

experiences with the object grow, “our skills in using it improve and our relationship to it changes – it will become more and more personal and subjective” (*Ibid.*, 46).

Identity and Status in Material Culture

Objects (and technical gadgets) are in much theoretical writing connected to a possible social identity of a person (see, for example, Belk 1988, Csikszentmihalyi & Rochberg-Halton 1981) and to the semiotic power of objects (Miller 2010, 12). As Hurdley (2006, 729) states, “people telling stories about objects they have in their homes are also telling stories about themselves, as moral beings with histories and beliefs, who are both socialized and individuated”. In the same way, people make assessments of other people in terms of their material possessions and imminent surroundings, such as their home (Wilson & Mackenzie 2000). In consumer culture studies, the effect of objects on the identity is widely acknowledged. Illouz (2009, 392), among others, argues that “[c]onsumption entails a painstaking process of self-fashioning through commodities. This process of self-fashioning is made all the more strenuous when the market recruits the consumer through the sysiphanian [sic] exercise of his/her freedom to choose who he/she is”. However, as one has been reminded, there is no such thing as true inner self, but “a transient self” that is relatively mutated in different contexts. To quote Miller (2010, 19): “we have to imagine a situation in which being is constantly re-created through a strategy of display and the response of that moment”. The complex nature of identity is argued to be a postmodern phenomenon because images are “proliferated”, and there are multiple choices of self-fashioning available for people in every class of society (Featherstone 1991, 83).

However, forming an identity in a consumer culture is not as free as might appear. There are, for instance, “social regulation, conventions, routines and socialization in peer groups”, restricting the freedom of choice (Wilska 2002, 196). Further, as Wilska (2002) argues, cultural and national conventions affect how consuming is connected to the formation of identity. As she notes (*Ibid.*, 195) about the Finnish consumer: “The findings suggest that most Finnish consumers may not consciously consider consumption to be a major part of their identities.” Finally, a large portion of studies concerning consuming and identity “is based on a type of old-fashioned

economic determinism and offers only a partial insight into the nature of consumption practice” (Woodward 2012, 678).

As early as 1899, Thorstein Veblen (1934; see also Bourdieu 1984 for the connection between taste, consumption and class) identified conspicuous consumption and the role of objects in maintaining social status. Dant (2005, 23) condenses the idea of this classic sociologist and economist as follows: “Members of society follow a standard living that is equivalent to those who share their class or community; through habit and convention they feel obligated to be seen as members of a particular stratum.” While this obviously holds true, Veblen contemplates materiality only through display and its expressive function, which may be considered a shortcoming of his theory. Silva (2007, 156) also detects this and concludes that “I want to firmly stress that objects cannot be reduced to simple signifiers of difference of status and social position notwithstanding the importance of this process in consumption culture.” As Featherstone (1991, 86) notes: “The instrumental and expressive dimensions should not be regarded as exclusive either/or polarities, rather they can be conceived as a balance which consumer culture brings together.”

Practices in Material Culture

Objects are closely tied to practices, and practices are maybe one of the most popular ways to address objects in material culture studies and in consumer culture studies (see, for example, Halkier et al. 2011, Reckwitz 2002b, Shove 2003, Shove & Southerton 2000, Shove et al. 2009, Warde 2005). In the words of Dant (2005, 26; see also Dant 2008; Mauss 1973, 37; Warde 2005): “The specificity of objects and actions both reflects and generates cultural conventions but significance is always limited by the practical and material constraints of our bodies and the objects they interact with.” Reckwitz (2002b, 250) defines the term “practice” by writing that “[a] practice is thus a routinized way in which bodies are moved, objects are handled, subjects are treated, things are described and the world is understood”. Practice is, therefore, a form of doing that also includes sayings, and takes into account the role of materiality in our lives. This is an important aspect of materiality in terms of technologies: there is no way to study domestic appliances without verbally referring to “doings” and the routines of home.

Further, domestic gadgets are part of consuming practices as they are usually purchased, appropriated, used, and finally disposed of. Halkier et al. (2011, 4) write that Warde (2005) was the first to introduce the term practice to consumer culture studies. As Warde (Ibid.,137) states: “Consumption is not itself a practice but is, rather, a moment in almost every practice.” The approach of practices is highly usable because it does not reduce theory to individuals nor to society/culture, but includes both by acknowledging the role of social structures in restricting and enabling action and meaning-making. As Ilmonen (2004, 33) writes about the role of objects in a social world: “[G]oods contribute to the patterning of our social world. Therefore, it is not right to reduce the social merely to human agents and their relationships, but also take our material surroundings into consideration in the formation of this (...).”

Material dispositions of objects are sometimes called “affordances” (Gibson 1979). Harre (2002, 27) explains diverse affordances by writing that “the same material thing may have a great many different possible ways in which it can be used”. There is, indeed, a direct link between technological objects and activities/practices: “[F]orm becomes through movements that entwine practitioners (human and non-human) and materials, form in practice-centred accounts is more a matter of object capacity.” (Ingold 2000 in Gregson et al. 2009, 249-250). People are able to “read” the affordances of material objects and are, thus, capable of using them. This reading involves earlier experiences with material culture, and this ability is embedded in bodily skills, habits and practices (Dant 2008, 29).

Consumption in Material Culture

Material objects have been – and continue to be – a part of consumer culture research, and some of the insights of that research are referred to in this study. Featherstone (1990) classifies three main perspectives in consumer culture research. The first one considers “the expansion of capitalist commodity production” and criticises the increasing ideological manipulation of consumers and excessive consuming (Ibid., 5). To quote Bauman (2001, 13), consuming is no longer

instrumental and about surviving: “In the consumer society, consumption is its own purpose and so is self-propelling.” Second, there are studies focusing on the social statuses and stratification of people in terms of material possessions (see also Holt 1995 for “consuming as classification”). Finally, consumer culture studies address the “emotional pleasures of consumption” and dreams and desires that manifest themselves par excellence in imaginative consuming (Featherstone 1990, 5; see also Holt 1995 for “consuming as experience”).

Nonetheless, I do not consider this work primarily consumer culture research. Dant (2005, 32; see also Featherstone 1990 and Woodward 2012, 674 - 675) is able to offer a reason for this:

The study of consumption has tended to focus either on the ways in which commodities are appropriated through buying and selling (advertising, shopping, desire for the new, the appeal to individual identity, etc.) or it has attempted to articulate consumption as a way of social structural alignment, through social class, emulation, ostentation and the habitus.

Instead, my intention is to concentrate on the processes of making meaning of domestic appliances, let it involve identity, status, practices, emotions, and all other possible aspects of the phenomena. Further, I focus on mundane living and the everyday life of “common people”, and therefore, my focal point is not the institutional level as it usually is in consumer studies. As Woodward (2003, 408 - 409) points out, “researchers must first theorize consumption from the viewpoint of actors”. These limits of consumer culture research have been discerned, and there has been an explicit demand for more diverse approaches, including those of embodiment and material interaction, and inequalities of social order (Watson 2008). As Watson (*Ibid.*, 9) states, there is “consumption beyond the point of acquisition”, and “using” and “doing” (or accounts concerning them) are also productive and expressive by nature, and include bodies, objects, and practices alongside the cultural meaning-making processes. In addition, Featherstone (1990, 5; 6) expresses his concern about the too-limited viewpoints of consumer culture studies by writing:

It is important to focus on the question of the growing prominence of the culture of consumption and not merely regard consumption as derived unproblematically from production. The negative aspects and mass society are also emphasized in consumer culture research although the use and requisition of objects may convey and embody also positive and creative experiences.

Social Shaping of Material Objects and its Connection to Purification-Hybridisation

There has been a claim for “a symmetry between humans and non-humans” (Latour 1992, Veerbek 2005) in material culture studies in order to improve the secondary role of objects in relation to humans. Put simply, it has been alleged that human and non-human elements should be treated as equivalent in research. On the one hand, this is a reasonable request: materiality and objects have been belittled in many sociological studies² (Dant 1999/2001/2005, Miller 1998c, Olsen 2003, Prown 1982). As Dant (2005, 12) argues, the marginalisation of objects “is strange because one of the most dramatic impacts of industrialization has been on the transformation of human material life”. On the other hand, I believe that technological objects cannot be treated as fully human. Technologies are human-made, using human resources, human policy-making, and other related human activities. In this sense, I follow Pinch (2009, 51), who suggests us to preferably ask “how and under what circumstances nonhumans and their impact are made visible in the first place”. Similarly, Miller (1998c, 491) proposes the following standpoint:

[A] middle route into the study of artifacts which avoids either an isolation of the artifact stripped of the social relations that produce and consume it, or an isolation of the human subject denuded of the artifactual environment which creates constraints and is a primary means by which the subject has consciousness of her or himself.

Dant (2001) writes about “quasi-subjects” in terms of material objects, which I consider a viable definition of also technical objects in our everyday lives. “Quasi-subject” gives a subject status of some sort to a thing and does not reduce it merely to its material aspects; nor does it exaggerate its abilities to function as an autonomous subject. There are also views arguing for people-object separation as faux in the first place. Warnier (2009, 465), for instance, claims that “material culture

² There might be a change in this as Woodward (2012, 673) states that “it seems apt to observe that materiality, objects and ‘stuff’ are the new frontier, as sociologists position questions of materiality and object-based practices on consumption at the forefront of their studies”.

is partly included in the subject. It belongs with the body in motion. A subject is a subject-with-its-objects in motion”. Further, it is possible to think that we – humans – are dependent on material objects as “objects make people” (Miller 2010, 53). Miller (*Ibid.*) validates this claim by explaining how objects have “humility”, and how they do not demand attention in everyday life. This humility is exactly the reason why objects could be considered having power over humans. They might appear “silent” in the routine activities of everyday life, but their power becomes visible when, for instance, a coffee maker breaks down in the middle of making coffee in the morning.

Social shaping is a term from social scientific technology studies, and I approach technical and domestic objects from that standpoint. The social shaping of technology is a theory about seeing the social in technology (for example Bijker et al. 1989, Bijker & Law 1992, Cockburn & Dilić 1994, MacKenzie & Wajcman 1985, Oudshoorn & Pinch 2003, Silverstone & Hirsch 1992, Vannini 2009), and this research also rests upon that basis. Lie (2006, 167) argues that understanding technology in this way means that “[t]echnology and culture are conceptualized as interwoven in mutual shaping processes”. In addition, she (*Ibid.*) exemplifies that “the point being that a technical device could always have been otherwise. There is no technical necessity that leads to a certain end product, and culture is integrated, literally in-built, in the technical products”. Technology is, in other words, social in the sense that it is designed in a certain manner by people who choose to pursue specific decisions in the design project. If they chose differently, the outcome would be different (see also Pantzar 1996, 52-53).

The core in the view of social shaping of technology lies in contradicting technological determinism. In technological determinism, it is believed that “technology impinges on society from outside of society”, and technical change is seen “in some sense autonomous, ‘outside’ socially, literally or metaphorically” (MacKenzie & Wajcman 1985, 4). In contrast, it has been shown how technical change and technology blur categories that are normally kept apart, and the social in technology is argued to be “sociological, but also political, economic, psychological and historical” (Bijker & Law 1992, 4). For instance, in terms of domestic appliances, it has been examined how home and domestic technology are part of “considerable economic significance” (MacKenzie & Wajcman 1985, 174) as households are

connected to wider corporate decisions and are intrinsically bound to the infrastructures of society (water, electricity etc.). Thus, domestic appliances are not only objects that inevitably enter homes, but they are part of a large social system including engineers, corporate workers, local administrators, advertising and salespeople, and finally, the users.

The social shaping of technology is strongly related to the main analytical tool I use in this study, that is, Bruno Latour's (1993) notions of purification and hybridisation. The former term refers to a clean distinction of nature/science from society/self while the latter describes hybrid things that mix objects and subjects, nature and sociality. Latour further argues that the purification process is characteristically a modern feature, and modernists tend to use this dichotomy to justify causal explanations: one precedes another. This separation between materiality and sociality is used to distinguish "modern" Westerners from savage cultures based on magical thinking and applying humane characteristics to inanimate objects. Purification, for Latour, is a process that is used in order to keep this seemingly ontological separation between humane and inhumane alive. Hybrids, in turn, are a living proof of the crisis in modernist thinking as they embody both the material and social, science and the societal. In practice, hybrids are seen, according to Latour, for example in global warming and variant Creutzfeldt-Jakob disease (commonly known as mad cow disease). They are simultaneously social as they are caused by humans and "natural" as they cannot be completely controlled by humans. Accordingly, science (and technology) cannot be strictly distinguished from the political and social: it does not arise straight from nature. Modernists are forced to see the social consequences of their own actions and realise that their idea of separate realms was artificial in the first place.

To replace such modernist thinking, Latour (1993) suggests we abandon the ontological concepts of nature and society and start to talk about nature-cultures that differ from each other only in the extent of their networks. For example, Finnish culture differs from any aboriginal culture only in its magnitude and length of mediating networks between nature and society. We are not, for instance, superior in technical thinking as the progress in technology is derived from the refusal to see social elements in science and technology. In other words, we should not explain things arising from nature or society, but things explain nature and society; the

starting point for the explanations moves from the opposition of these concepts to the middle and takes both into account. Consequently, we discard essentialism and begin to see processes that consist of material, social, and discursive elements (*Ibid.*).

Latour's theory could be seen to comply with the ideas of social shaping of technology; both Latour and scholars in social shaping argue that social elements are an essential part of technology and both understand technology as a social process, not as a stable construct having fixed and ready-made meanings. Moreover, Latour is firmly connected to the research pursued in material culture studies, as one of his aims is to bring objects into the research and into the explanations about the world, and he is arguably one of the most discussed and applied scholars in the field of material culture.³

What do these philosophical explanations mean in terms of this study? First, they direct attention to technology that is multifaceted and multidirectional. Although people tend to use hierarchical dichotomies and categories when talking about and giving meanings to domestic technologies, I do not think technology is purely scientific or social but consists of both⁴. Second, technology is assigned meanings to in the processes of purification and hybridisation, and its separation into scientific and social facts should be possible only analytically. As we shall see in the empirical chapters of this study, technologies are at the same time purified, that is, just functional, but they are also social, entailing different discourses, social relationships and emotions. Although these elements are separated for the analytical clarity, they should not be seen as essentially and ontologically different. Rather, the scientific and natural facts of technology, the social and practical ways of using it, its materiality, and the social ways of talking about it (discourses), are all part of the same process that is defined as technology.

There are, admittedly, shortcomings in Latour's thinking, for he uses and applies the terms of purification and hybridisation only at the macro level, such as within culture

³ Especially Latour's (1987) idea of actor-network theory and his theorisation about actants (actors that might be human or objects, Latour makes no difference between those two) is well-known and frequently used in material culture studies (see, for example, Olsen 2003).

⁴ This stance also follows Graves (1999, 364), who writes about the psychoanalytical history of a jug. She elaborates that "[o]bjects are neither people nor nature, yet they combine elements of both. They function as disturbing interface, an ambivalent love affair".

and within science. This means that he ignores many aspects of social life, including gender and emotions. Irrespective of this, I apply his thinking to the domestic and private areas of life and expand his ideas to cover these unnoticed aspects as well (see chapters 5 and 6). Following Silva (2010, 184), I maintain that "homes and families are not isolated from transformations in the world at large. I note the interplay between choices of ways of living and societal changes, asserting that family and home are not dependent and powerless spheres". Public and private, or culture and individual conceptions, are, thus, related to each other, and the same kind of terminology could be used at both levels.

In addition, Latour's analysis of science, technology and society is mainly abstract theorising and he seems to use the dichotomy between purification and hybridisation to explain technology, science and society "at large" and at the general level. My view on purification and hybridisation is more intimate, practical and empirical, as I use those terms to analyse and explain "ordinary people's" interviews and how they make meaning of domestic technology. For example, in chapter 4, I compose different types of purification in terms of technology and explain with those ideal types how people try to control technology and technical devices in their minds and in their homes. In chapters 5 and 6, my perspective shifts to the empirical hybridisation and I discuss how social relationships and emotions are part of domestic technology and how they can be regarded as technological hybrids. With these analyses, I hope to illustrate how Latour's philosophical and high-flown texts could be converted into an analytical tool, and how purification and hybridisation empirically explain people's relationships and attitudes concerning domestic material culture and domestic technology.

2.2 Notion of Home

This study focuses on domestic appliances. In order to understand mundane technologies and all the meanings people attach to them, it is important to understand what home is, how it acts as a context where methodical actions are pursued, and how it is intertwined with technological objects. In other words, as will be demonstrated in the methodological chapter (chapter 3), it is a challenge to conduct research interviews in people's homes, and this rich and culturally normative

context should be known and paid close attention to when starting to design a research process. Further, domestic appliances do not exist in isolation, but they are situated and used within the home, meaning that they ought to be understood in this respect. For example, one way to purify technology is to justify it by the specialness of home, and the essence of home is seen to be endangered by the excessive use of technical devices. If we want to have a subtle understanding of domestic appliances, we need to start with an elaboration of this multifaceted notion of home.

The most familiar association of home may be space, and in common usage, it is often used as a synonym for a concrete house or a flat (Terkenli 1995, 325). Housing, or dwelling, can be defined as an activity where a person takes a certain space under his/her control by carrying out mundane living and routines. Creating a space and the active making of the home are thus emphasised in the concept of housing (Saegert 1985). More interestingly, and according to many empirical studies, the home is a more complex notion than just a place where people live, including social, cultural and political dimensions as well. In other words, housing does not necessarily require a home. A person can dwell in a space without feeling that this space is her/his home, something yielding over the practical and physical experience, and ending in the existentialist feeling of home (for example Blunt & Dowling 2007, Dovey 1985, Granfelt 1998, Saegert 1985).

In the research on home, the psychical aspect is often mentioned as the core of home, alongside such material structures as decoration and architectural elements (Rapoport 1995, 41). However, the notion of home cannot be unanimously and clearly defined because of many contextual reasons. First, home does not restrict itself to a single and static space as it is sometimes addressed from a larger scale. In some cases, for example, home is used to allude to such eclectic areas as a whole city or even a nation⁵. Another issue hindering an unambiguous definition of home is its synonymous use with a house or a flat. As introduced in the section above, home cannot be circumscribed to its physical appearance, but it also includes other dimensions of which maybe the most important ones are social in nature. The third

⁵ A well-presented introduction to the relationship between home, nation and nationality can be found for example in Blunt & Dowling (2006, 140-195).

matter obstructing the clear concept of home is the cultural and historical context in which it is used. It is quite self-evident, for instance, that a home located in a Western metropolis is differently composed from the one in a rainforest. Thus, the notion of home does not have a stable quintessence, and it transforms along with the surrounding culture, and as well within the same culture in terms of its historical trajectory⁶. It is also worth noting that everyone has one's own, personal history of home (for example Vilkko 1998), meaning that even one person's notion of home changes according to different situations in life. Nevertheless, a childhood home is quite unanimously considered an anchor with which all the later homes in one's life trajectory are compared (Bachelard 2003, Horelli-Kukkonen 1993, Morley 2000, Pallasmaa 1995).

The notion of home has been widely studied from a broader context, often approached from its surrounding culture, society, nation, or political implications. Blunt & Dowley (2006, 89), for example, point out that homes are at the crossroads of economic relations, that is, homes are places which produce economics and which national economy strongly affects. Political issues are also emphasised. Homes have been considered profoundly gendered realms, and especially women's role in this private sector has been scrutinised from a critical feminist angle. Even today, women pursue more household chores than men (for example Chapman & Hockey 1999), and they are often responsible for creating the homely atmosphere, for example, by decorating the home (Madigan & Munro 1996, Putnam 1995, Shove 1999). Furthermore, several studies highlight the very contradictory aspects of home: the ideal notion of home as a haven may conflict the prosaic experience of living. In this regard, it is worth remembering that homes may be places of domestic violence and subordination (for example Goldsack 1999, Manzo 2003). Researchers of homelessness, in addition, remark that homes with minimum standards are not available for all people, not even in countries with a strong social security system (for example Granfelt 1998, Rivlin & Moore 2001). The political aspect of homes can also be seen in the stream of people moving and re-locating, as many refugees and immigrants are forced to leave their native homes and construct a new understanding about the personal notion of home (for example Brah 1996, Huttunen 2002).

⁶ For the historical construction of space and home, see for example, Munro & Madigan (1999) and Saarikangas (2002).

All the features of home, even the most contradictory ones, imply that the notion of home can be plausibly described with different dualities. Blunt & Dowling (2006, 17) introduce a dualistic understanding of home with the following dichotomies:

Home – work, feminine – masculine, private – public, domestic – civic, emotions – rationality, reproduction – production, tradition – modernity, local – global, stasis – change.

These opposites illustrate that in order to comprehend the essence of home, we need to address normative features that are excluded from it. In practice, the world is not so black and white, but it is worth noting that homes are places where both opposites are present at the same time, changing only in their weight. Consequently, it should be acknowledged that these kinds of classifications are always based on the ideal, the way certain things should be, and which often collides with the real world.

At the general level, it could be argued that there are three key dimensions of home: inhabitants (emotions, social relationships, family), materiality (architecture, possessions), and symbolism (ideals, meanings, images) (Aaltojärvi 2005). However, as Moore (2000) remarks, the studies of home have gone beyond listing the functions and meanings, and are shifting toward a more detailed understanding of the different contexts and theoretical stances. Also, I follow Silva (2010, 32), who eloquently describes her similar research setting concerning technology, culture and family:

Homes are the core empirical space of my investigation and I enter homes interested in the dynamics of relationships involving human and objects, aware that the personal practices I see and that are talked about by research participants are achieved through connections between more than one individual, and that this has been fine-tuned through a long process of accommodation that the person has made to her or his habitat. This involves biographical, material and social issues, and regards both present and past accommodations.

According to the interviewees of the data and in terms of domestic technologies, the home first and foremost seems to be something very ideal, which should be cherished and protected from the domestic appliances (see chapter 4 for the controlling of home and chapter 5 for the ideal of a room without technical devices). Further, the home appears as a sanctuary of intimate social relationships and is connected to the family members and to the overall idea of partnership.

2.3 Everyday Life

Miller (2001) argues that most of what matters to people takes place behind closed doors, which is also a relevant starting point in this research since domestic technologies are part of our everyday routines in the home. All of the interviews covered the everyday life of the respondents. In fact, it seems practically impossible to talk about domestic appliances without referring to everyday life and practices pursued in it. This is also connected to the notion of home introduced previously as the essential context of the research and the place where the everyday happens.

The mundane has largely been ignored in sociological studies. As Woodward (2001, 130; see also Money 2007) remarks: “Studies that explore the more mundane, habitual and taken for granted consumption practices, in particular, the study of ‘objects’ and domestic material culture, ‘are thin on the ground’ within mainstream sociology.” One reason for this may result from the almost impossible definition of the everyday. Adler et al. (1987, 217-218) note this inaccessible nature of the everyday as follows:

Any attempt to offer a brief but thorough outline of the focus and scope of everyday life sociology is difficult because of its diversity and the lack of systematic integration among its subfields. In fact, the sociology of everyday life is an umbrella term encompassing several related but distinct theoretical perspectives: symbolic interactionism, dramaturgy, labeling theory, phenomenology, ethnomethodology, and existential sociology.

However, one feature common in everyday life studies is their focus on micro phenomena instead of larger macro structures of the world and societies, and in fact, the study of the everyday has originated in the critical stance toward the predominant macro analysis (Adler et al. 1987, 218-219). Something about the concept of the everyday can be interpreted from the diverse sociological directions the everyday life studies have formulated. Adler et al (1987, 222 - 227) classify that within the research addressing the everyday, there are branches of “existential sociology”, “the sociology of emotions”, and “conversation analysis”. Among existential sociology, the scope has been on emotional and irrational people searching for the “meaning and self in an increasing bureaucratic modern society” (Ibid., 223). Sociology of emotions, naturally, has been about emotions and their connection to inner (cognition, body) and outer (society, culture) stimulus of an individual acting in everyday life. Finally,

conversation analysis is “a method of data gathering and analysis that is informed by the theoretical beliefs of ethnomethodology” (*Ibid.*, 226). This branch of research analyses the naturally occurring, *in situ* language in everyday contexts or institutional settings.

To offer some kind of definition for everyday life, I turn to Salmi (1991)⁷, who presents different ways to outline everyday life in sociology. The first one is “something else than non-everyday”, meaning that there is an emphasis on major structural phenomena, such as politics and economics that tend to overshadow the everyday. Second, the everyday may be linked to reproduction. This could be seen in relaxation, charging one’s batteries in order to keep up in the hectic work life, but reproduction may also be seen practically since the everyday is where children are born and socialised into the culture and society. Further, the everyday could be interpreted as “the world of routines”. This definition comes close to my research as domestic appliances are embedded in routine practices, and in some cases they enhance and support the perpetuity and fluency of everyday life. However, within this view, there has been a tendency to perceive routines as banal and tedious. I do not subscribe to this because it is routines that help us to pursue everyday life and they could be apprehended as central in the flow of everyday life. Finally, and more importantly according to Salmi, the everyday may be construed as “an imminent world that is around us”. In my mind, this conveys the very essence of everyday life; it is something that is here all the time even though we do not necessarily notice it. This outlook indicates that work is also part of the everyday. While this applies to most of the respondents in my data, my focus in this study is in the home and domestic appliances, although I understand that “the official” and “unofficial” are not separate entities, and the nexus is sometimes articulated in the data and analysis (Burkitt 2004, 214).

Jokinen (2005, 7-20) approaches the definition of everyday life through opposites and paradoxes. To begin with, while the concept of everyday life appears something that can be taken for granted, it also seems to slip away when attempts at defining it clearly are made. To continue, everyday life feels superficial, but when something goes wrong and breaks the routines, it becomes “heavy”, and also affects other parts

⁷ The translation from Finnish into English by IA.

of life. Routines are an intrinsic part of everyday life, and functional routines could be said to constitute the main body of it, even if they are rather difficult to identify and explicate. To quote Wahlen (2011, 512): "The banality of the rhythms of everyday life, the sheer inconspicuousness, makes routines appear as irrelevant and unrecognized." Finally, the paradox of gender is embodied in everyday life. Jokinen explains that the concept of everyday life arises alongside the separation of life between private and public, and whereas politics, economics, and work have been considered a male area, home and the private sector have been associated with women. This dichotomy can still be seen in people's – and my respondent's – lives as, for instance, the domestic division of labour continues to be unequal. All these aspects of the everyday Jokinen presents can be seen in this study, and it seems that domestic appliances have become a constituent part of the everyday and connected to these paradoxes.

Furthermore, Jokinen (2003, 5-7) writes about a "natural attitude" that reigns the everyday life. This means that not everything – whether they are things or occasions – are consciously contemplated and given meanings to, because people usually trust the stability of their surroundings. Living in the everyday would be impossible without the natural attitude. We need routines and some sort of solidity to pursue fluent everyday living. People tend to give meanings to things and occasions, and they do that all the time and naturally, but only by necessity. Let us say, for example, that we drink coffee every morning. We make the coffee in a percolator and drink it without further thought, but if we run out of coffee filters, we are faced with what seems a huge obstacle and suddenly the morning routines have to be altered accordingly. What was the most mundane task and pursued with the natural attitude the previous day, becomes something that distracts and requires inventive measures and extra effort. This term of natural attitude also surfaced in the interviews conducted in this study. Domestic appliances are commonly almost invisible at home and so deeply immersed in everyday life that the respondents often struggled to verbalise their thoughts about them.

In terms of domestic appliances, one of the most important themes of everyday life is its connection to domestic activities and routines. As Burkitt (2004, 211, 212; for practices and everyday life, see also Dant 2008, Hand & Shove 2007, Shove et al. 2009, Wahlen 2011, Warde 2005, Warnier 2009) argues:

Everyday life is profoundly related to all activities. (...) “[T]he reality of everyday life – the sum total of all our relations – is built on the ground, in daily activities and transactions. This happens in our working relations but also in friendship, comradeship, love, the need to communicate and play.

Obviously, the material form and instrumental nature of technical objects convey the idea that technologies are here to be used, that is, they need at least some human activity in order to fulfil their purpose of use. In the realm of home, this means that technical objects become part of, maintain, and construct routines and habitual repetition (Gram-Hanssen 2007). To illustrate, Gram-Hanssen (*Ibid.*, 1183-1184) reviews how new technologies have changed the routines in the last century. Electric lighting, for instance, has dramatically altered the ways we live and act inside our homes. Further, electricity and new household appliances, such as the refrigerator, have changed routine activities, but as Gram-Hanssen (*Ibid.*, 1184) argues: “Even more than other technologies, ICT has brought social and cultural changes. It not only made communication easier, it also fundamentally changed it. (...) For ICT we cannot really talk of a change in routines as here we see more development of new routines.”

2.4 Technology – Domestic Technology

The research interviews pursued during 2006-2007 covered all the possible issues concerning domestic appliances at that time (see the following chapter 3 for the themes discussed), but I did not want to define technology beforehand and wanted the interviewees do it for me. In this section, I describe the interviewees' understanding of domestic and technical objects and try to establish a definition of domestic technology. In order to comprehend what is meant by domestic technology, I briefly introduce the definition of technology in general.

Commonly, technology is defined as follows (according to Wikipedia <http://en.wikipedia.org/wiki/Technology>, retrieved 15 May, 2013):

The word technology refers to the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization, in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform

a specific function. It can also refer to the collection of such tools, including machinery, modifications, arrangements and procedures. Technologies significantly affect human as well as other animal species' ability to control and adapt to their natural environments.

This is a broad definition and rests upon the rational understanding of the world and human actions in it. Rose (2000, 315) offers a more narrow definition of technology:

Technology, here, refers to any assembly structured by a practical rationality governed by more or less conscious goal. Human technologies are hybrid assemblages of knowledges, instruments, persons, systems of judgement, buildings and spaces, underpinned at the programmatic level by certain presuppositions about, and objectives for, human beings.

In other words, technology is not necessarily merely a material object, but it embodies knowledge and human beings who design, compile, and use those material objects. This refers to the social aspects of technological gadgets. As argued earlier, I maintain in this study that no technology is purely material and/or technological as it always involves humans and their actions. However, as the focus is on domestic appliances, technology may as well be defined as Joerges (1988, 221) does: “(technology) refers to artificial things, and more particularly modern machines”.

In this study, I wanted to give the respondents their voice and let them define what they consider domestic technology to be. This also affected the analysis and the conclusions, as I concentrated only on the appliances that the interviewees defined as domestic appliances. All the households involved had, one could say, “considerable access to technologies” (Silva 2010, 39), as all of the interviewees were middle-class and quite well-off⁸. Basic domestic appliances and devices for

⁸ It has been proved that purchasing and owning technical objects depend on one's socio-economic status. Räsänen (2003, 159), for instance, writes that “[p]rofessionals or managers seem to be the socio-economic group that spend most on culture and luxury” (Räsänen includes technologies in this group of culture and luxury). I admit that in the case of domestic technology, there is a real danger of the so-called “digital divide” (see, for example, Punie 2005), but this is not seen in the data of this study, as the respondents were quite a homogeneous group, socially middle class. However, as Silva (2010, 37) points out, class differences concerning the ownership of domestic appliances have narrowed during the recent decades, and “[i]n the UK, broadly speaking, everyone has it all”. I suspect that Finland is similar to the UK in this case, if we exclude the most costly entertainment technologies, for example iPads.

entertainment, for example, refrigerator, oven, washing machine, television and DVD player, could be found in all of the households under research. A couple of them did not have a computer at home, but the reason for this “shortcoming” was the users’ age: they told me they were too old to learn how to use one. Furthermore, some of the respondents said they had no microwave oven because of their style of living and investment in “proper cooking”, using fresh ingredients and a stove with an oven. In other words, while generally speaking the respondents had resources for owning all the possible domestic devices, they had performed and expressed moral choices considering their acquisitions. This reflects the fact that the users of domestic technology are not passive consumers, but pursue conscious decisions, which at the same time yield their identity and lifestyle observed by those outside their home. As Silva (2010, 129) argues: "Theories need to account for the active role of users/consumers in shaping technological artefacts and their meanings. A cultural identity is being created at the same time."

In practice, I started each interview by asking the respondents to divide different household appliances into feminine, masculine, or gender neutral⁹ and to tell me the most important domestic devices¹⁰ for them. This way I managed to make the respondents contemplate the nature of domestic technologies, and the majority of them pondered in their answers what the most self-explanatory gadgets in the home were. The majority named the following appliances as the most important: *oven, stove, washing machine, and refrigerator*. This indicates that domestic technology is primarily understood as kitchen tools that are used every day. However, in some interviews, the refrigerator was considered so invisible that the respondents first forgot its existence and mentioned it only later on in their interview. Lie (2006, 167) argues that “[t]he connection of technology to masculinity has implied that tools are more easily identified as technologies when they belong to the masculine realm”. This is not the case in this research, as domestic technologies were primarily associated with what are commonly considered “feminine gadgets”, that is, those aimed to save time in domestic duties (see Aaltojärvi 2012 for ascribing gender to domestic appliances).

⁹ This task was a part of another research project and is analysed in Aaltojärvi 2012.

¹⁰ The interviews were pursued in Finnish and I used the Finnish word "kodin teknologia" in the interviews.

This might also stem from the fact that refrigerators and washing machines have a long history in Finland, meaning that they have had enough time to settle as an inevitable part of the home. As Pantzar (2000, 42; 135) writes, in the 1960s, the refrigerator and washing machine were already found in half of the households in Finland, and at the beginning of the 1950s, over 90 per cent of the Finnish housewives considered refrigerators and washing machines indispensable, even if the appliances in question were extremely rare at that time.

After these basic time-saving “white devices”, the interviewees mentioned “brown devices”, which are used for entertainment and are therefore time-consuming (Bowden & Offer 1994). In this cluster, the most frequently mentioned devices were *television, audio system, radio, and computer*. While some of the respondents mainly used the computer for entertainment and/or educational purposes, others also used it for remote work. Interestingly, almost all of the interviewees also mentioned the mobile phone as one the most important domestic technologies. Obviously, the main reason for such popularity was the mobile phone’s communication aspect. However, including the mobile phone in their list indicates that people define an object as domestic even if it is mobile and not always located at home. The same also applies to the laptop computer discussed by some of the interviewees.

The less common devices, yet still quite frequently mentioned in the interviews, were: *vacuum cleaner, dishwasher, coffee maker, electric kettle, hand blender, food processor, toaster, microwave oven, extractor hood, DVD player, iPod, and Xbox game console*. These gadgets were perceived as less significant than the big white devices, but still somehow necessary in the domestic environment. In this cluster, it was prevalent to state that although these technologies were considered important, they could be lived without. However, two of the interviewees stated that their iPods were extremely important to them, and they could not live without them¹¹.

In addition, a few of the respondents talked about *the car* and *the sauna stove* as domestic technologies. The sauna stove is easily understandable in the context of Finnish culture where for many going to sauna is an inherent part of their everyday life. The car is less straightforward because its location is not the home but the garage

¹¹ See Scott & Woodward (2011) for the special relationship between the users and their iPods.

or the yard. Nevertheless, it could be argued that given the context of domestic technology, the car is perceived as an extension of the home. It is not just a vehicle enabling people to move from one place to another, but a familiar and safe place that allows the car users feel at home.

Some – mainly the elderly – respondents also highlighted the importance of *electricity* in the home. Given their age, they would have witnessed the trajectory of domestic technology right from the beginning, and hence they could compare the first innovations with the later ones. With this insight, the elderly described their childhood without electricity and praised the coming of that infrastructure. Further, electricity was connected to light and *lighting*, and the everyday was commonly described by contrasting domestic settings with or without light.

Finally, the respondents living in a detached house mentioned *the whole house* as domestic technology. In other words, the house was deemed as a technological unit consisting of large, structural technology. Residents of the house were seen to embody and inhabit the technologies, and often their relationship with that kind of technology was depicted as subordinate because these complex technical structures were reported as being hard to master, maintain and fix. Different heating systems, air conditioning systems and security systems were mentioned as being at the heart of the house. This class of domestic technology is interesting as it highlights the ubiquitous role of domestic technology: technology is everywhere even if it is not continuously noticed.

The terms “domestic” and “technology” were separately defined in some interviews. Two of the male respondents tried to explain what they mean by “technical”. To illustrate, one middle-aged male considered whether or not his stereo system was domestic technology:

A: I don't quite understand, in my mind ‘technology’ doesn't sound like my stereo system at all. I think coffee makers and others like that are domestic technologies.

Q: Why do you think they are domestic technologies?

A: I don't know...They are just called that. I perceive domestic technology as kitchen tools or that sort. However, I don't like to call my stereo system a stereo system. I think it's a sound reproducer.

(...)

Q: What do you mean when you say that something is technical, what is that “technical”?

A: It’s about the structure of the device. Then you think about how it’s compiled. Hi-fi components, for example, then you think about how and what they are made of.

According to the interviewee, domestic technology is primarily connected to the activities taking place in the kitchen. In addition, he argues that the definitions of technology and technicality are rooted in the structure of devices. Later in the interview, he returned to the issue and stated that technical features are also seen in the outer features of the device in the form of different knobs and controllers. This is an interesting view, as it has been commonly argued that technologies are often seen and understood as large machines in institutional (not domestic) fields (for example Faulkner 2000, 93). Put differently, Silva (2010, 179) notes: "Other technologies that we meet on a daily basis, relate to, and make some sense of, are not readily identified as 'technology'." In my data, this was not the case, and the interviewees fluently interpreted domestic appliances as technologies, too.

Further, another male interviewee defined technology by contrasting it with “soft things”. In his mind, technology and technical gadgets are “hard”, and they should be subordinate to “soft things” at home, such as textiles, sofa and so forth. Obviously, technologies are hard when judged by their materiality and external appearance: they are made from plastic, steel or metal and they feel hard when touched. By the same token, technologies are said to belong to the “hard values” as opposed to “soft values”, including humanity and social relationships (see chapter 4 for this counterpoint).

The term domestic was in some interviews referred to as being a place for social relationships and relaxation (see the notion of home earlier in this chapter), and technology was perceived as somewhat contradictory to the idea of home. Domestic technology was most commonly thought of as something being and used at home. Having said that, this was not crucial as cars and mobile phones were devices that were talked about alongside other domestic devices. Accordingly, domestic is a term suggesting a special closeness to a material object; it does not necessarily mean its

physical location. Raudaskoski (2009, 9-10) argues that "[t]he mobile phone can be called 'an extension of the human' because its features have become personal potentials for social interaction anytime and everywhere". These features and being "an extension of the human" are the very reasons why mobile phones were so eagerly accounted for as domestic appliances. Further, Raudaskoski (2009, 23) writes that "[m]obile phone connection has become a 'home base' embodying a virtual base for the meeting up of family and friends". Interestingly, Raudaskoski uses the term "home base" to illustrate the domestic nature of mobile phones.

By using the respondents' ways to define and classify domestic technology, the following table can be composed. Table 1. illustrates the mundane technologies that the interviewees defined as domestic appliances.

Table 1. Domestic Appliances Defined by Respondents of Data

The most important domestic appliances	Oven, stove, washing machine, refrigerator
The second most important domestic appliances	Television, audio system, radio, computer, mobile phone
Appliances in the background	Vacuum cleaner, dishwasher, coffee maker, electric kettle, hand blender, food processor, toaster, microwave oven, extractor hood, DVD player, iPod, Xbox game console
Things mentioned alongside domestic appliances	Car, sauna stove
Basis of domestic appliances	Electricity, lighting
House as domestic appliance	Heating systems, air conditioning systems, security systems

Table 1. summarises the domestic appliances defined by the interviewees. The first column includes the devices – oven, stove, washing machine, and refrigerator – that the respondents considered the most important appliances in the home. According to the interviewees, they could not live without these appliances. Below these basic devices are the ones that were perceived as important, but not as essential as the white devices in the first section. This cluster includes, among others, television and mobile phone. Third, there are gadgets that I named “appliances in the background”, and this class contains, for example, vacuum cleaner, coffee maker, and microwave oven. These technologies were commonly mentioned in the interviews. Nevertheless, they were generally referred to as “important, but not so important that they could not be lived without”, and they were not in the urgent shopping list if they broke down. Car and sauna were things that were customarily mentioned along with other domestic appliances. These technologies could be argued to be borderline definitions of domestic technology: not belonging to basic domestic devices, they were still apprehended as domestic gadgets, and were somehow important for the interviewee in question. In addition, domestic technology was also defined from a wider perspective: the older respondents, in particular, mentioned especially electricity and lighting. In this case, electricity was comprehended as serving as a basis for the later technological innovations. Finally, the whole house was defined as domestic technology, and the infrastructure of the house, that is, the systems of heating, security and air conditioning, were talked about as constituting an overall structure of domestic technology that can be lived in.

In conclusion, domestic technology is primarily understood as the big, white devices of the household, but it is not limited to them, since entertainment gadgets and small kitchen devices are also perceived as domestic technologies. In addition, the car and the mobile phone belong to domestic technologies because of the special relationship people have with them, and because of the importance attached to their use. On a larger scale, domestic technology may denote the technical structure of the house and electricity that is the basis for all domestic appliances.

As mentioned earlier, this definition made by the respondents affected the analysis of the data because I wanted to concentrate on the gadgets and issues they emphasised in their talk. In practice, this means that these “big white devices” and the most common entertainment technologies are the most visible ones in the

analysis, and ICTs may seem overshadowed by them. However, the final point of departure in this research is not single objects, but domestic technology as a whole, which means that conclusions have been drawn keeping all the domestic technology in mind, lest they be “white”, “brown”, small, or big.

3 Interview Method and Settings

We got to install microwave ovens
Custom kitchen deliveries
We got to move these refrigerators
We got to move these colour TV's

(Dire Straits: Money for Nothing)

This chapter introduces the process of data gathering pursued during 2006 - 2007 and the practical settings of the interviews. I begin with the summary of the qualitative interview method, after which I elaborate on the research questions and introduce the respondents of the data. Finally, I contemplate the issue of gender and how it has affected the research process both at the point of the data gathering and at the analytical level.

3.1 Qualitative Interview

As interested as I was in domestic material culture, I did not only want to observe the informants' homes and their domestic appliances, but also talk about them and analyse how people tell stories and depict their relationships with domestic devices¹². Material objects themselves are able to tell stories, as, for example, their form (colour, size, etc.) and place in the home (in the back or front of the shelf, etc.) are traits that could be scientifically analysed. However, as Riggins (1994, 107), I also believe that:

¹² This method could have benefited from visual material, such as photos taken of the informants' home and of the devices that were talked about. However, to keep the research setting simple and manageable, I decided to exclude visual data from this study.

A trained ethnographer would more likely have realized from the very outset of the research that one cannot begin to grasp the full significance of domestic objects when information is not elicited directly from members of a household through conversations and interviews. (...) Which objects are chosen for display and the styles of display provide interesting clues about interpersonal dynamics within households and beyond. Much of this knowledge cannot be acquired simply from observing objects.

Qualitative interviewing, the method I applied in the data gathering, is based on conversations loosely guided by the interviewer (Warren 2002, Kvale 1996, Rubin & Rubin 2005). The simplest way to characterise this ethnographically related method is provided by Kvale (1996, 30-31), who describes the aspects of qualitative interviewing as follows:

Life World: The topic is the everyday lived world of the interviewee and his/her relation to it.

Meaning: The interview seeks to interpret the meaning of central themes in the life world of the subject. The interviewer registers and interprets the meaning of what is said as well as how it is said.

Qualitative: The interview seeks qualitative knowledge expressed in normal language.

Descriptive: The interview attempts to obtain open-nuanced descriptions of different aspects of the subject's life world.

Specificity: Descriptions of specific situations and action sequences are also elicited.

Deliberate Naïveté: The interviewer exhibits openness to new and unexpected phenomena, rather than having ready-made categories and schemes of interpretation.

Focus: The interview is focused on particular themes.

Ambiguity: The interviewee's statements can sometimes be ambiguous, reflecting contradictions in the world he/she lives in.

Change: The process of being interviewed may produce new insights and awareness, and the subject may in the course of the interview come to change his/her descriptions and meanings about the theme.

Sensitivity: Different interviewers can produce different statements on the same themes, depending on their sensitivity to and knowledge of the interview topic.

Interpersonal Situation: The knowledge obtained is produced through the interpersonal interaction in the interview.

Positive Experience: A well carried out research interview can be a rare and enriching experience for the interviewee.

In order to elicit answers that are produced in the respondents' own words and on their own terms, I used so-called open-ended questions, instead of questions that are strictly organised and formulated beforehand. For Denzin (1970, 125), there are three reasons to use open-ended questions. To begin with, it allows respondents to use their "unique ways of defining the world". Second, a fixed sequence of questions is not suitable for all respondents and open-endedness assists interviewees to utilise their own associations and order of thinking. Finally, in the open-ended style, respondents may "raise important issues not contained in the schedule". Open-ended questions are also advantageous when the research topic concerns tacit knowledge and there is difficulty to explicate the subject (Johnson & Weller 2002). Domestic technologies and their use are often taken for granted, which demands a great deal of effort and communicative competence from interviewees to describe them in all their subtlety.

Validity and Generalisability of the Data

The main aim of the interviews was to gather information on how people construct meanings about domestic technologies. In line with Woodward (2006, 265), I maintain that the meaning of domestic technologies is acquired "within local settings, where participants confer consumption objects a social life through offering active, creative accounts, or narratives". Local settings in this case could be said to be: first, the interview situation, and second, the everyday life and the home where the interviews were pursued and the domestic technologies are used on a daily basis. Third, the local setting is Finland and Finnish culture. The Finnish setting was noticeable at some points of the interviews (for example, when some of the interviewees defined a sauna stove as domestic technology), but I have provided explanations for such instances when necessary in the analysis.

Questions of objectivity/subjectivity, "truth", and the validity of the gathered data are widely and deeply discussed in feminist methodology (see, for example, Clegg 1975, DeVault 1996, Eichler 1997, Gorelick 1991, Hammersley 1992, Saltzman Chafetz 2004, Williams 1993). Feminist methodology is a controversial and diverse branch of writings in which epistemological issues, theory, and methods are contemplated in a critical manner, and the interest is especially directed to the reflexive capabilities of a researcher and the inequality of genders. My approach is connected to these accounts as I believe it is important to acknowledge contextual issues in terms of the methodology in use and reflect the ways the relationship between the researcher and the respondent affects the data. No matter how non-taboo the issue of domestic technologies seems to be, ethical issues are also important to keep in mind. In this sense, feminist methodology could serve as a guide to all qualitative research action.

Despite the fact that for some of its advocates, the main aim of feminist methodology is emancipation, I do not only aspire to emancipate women with this research. Anne Williams (1993, 575-576) contends that orthodox (mainly male) sociology is based on "conceptual splits", and "arguments are formulated in either/or binary terms". In this sense, I argue that pursuing research solely about women is the same kind of "conceptual split" as to conduct research solely in male terms and methods. To understand gender in the wider contextual setting of culture and society, I believe we have to address the whole picture. Some feminist writers show that gender is not a collectively held issue of identity and power (for example Faulkner 2000), and that other classifications, such as race and class, affect the researched phenomenon (for example Saltzman Schafetz 2004). Furthermore, in my view, feminist methodology directs attention to the contextual settings of the method in general, and does not have to concentrate only on gender. The active reflection on one's actions as a researcher and the context in which the research is pursued is important in all research effort, not only when focusing on gender. As commented earlier, I do not consider gender as a starting point of this research, but I discuss it when it strongly arises from the data and when it, in my opinion, affects the interview situation.

The ambiguity of the data and the complex question of validity can be traced to different levels of analysis. Anssi Peräkylä (1995, 41-45) itemises four different levels

wherein interpretations about the data could be made. He argues that the data can be analysed to reflect the facts of the world (1), people's experiences and emotions (2), culturally based sorting (3), and finally, the structure and nature of the actual interaction process (4). My epistemology and analysis follow Sakari Tamminen (2003, 118). As Tamminen, I believe that all these levels are simultaneously present (and sometimes also interlaced) in the data, and gender, for instance, is a diverse concept that can be seen at all of those levels. For example, a male interviewee might state that he likes to wash laundry although it usually is considered women's task. His comment includes a fact about the world (he washes laundry), a statement about one's feelings and experiences (he likes to wash laundry and presumably finds this task comfortable since he continues to like it), culturally based sorting (gender dichotomy, since laundry is usually women's task), and finally, a notion about interaction (he thinks he has to explain his action and acknowledges his awareness of its "deviant" nature). Thus, it can be seen that gender intersects all of these levels, and is not merely a one-dimensional element echoing the interviewer's own gender. As Tamminen argues (2003, 118), "gender is generated at the various levels of interaction. Accordingly, 'gender' or 'sexuality' is not unequivocal and easy to identify in textual data".

In addition to the respondent's own biological gender, the cultural gender division and one's place in it were visible in the data. Interview situations could be depicted as "triangular" as they were not just conversations between me and the interviewee. Besides our genders, there was the gender of the third person – the partner – even though she/he was not present in the room where the interview took place. Overall, the couples were discreet and tried not to disturb the interviews of their partners. Nevertheless, the impact of the third person could occasionally be sensed in the speech of the interviewee. Sometimes the partner even "revealed" that she/he had been listening in another room by shouting a comment to the partner's statement or directly objecting it in some controversial issue. Such situations made me feel that I was part of someone else's marriage, and I occasionally felt that I was some kind of mediator between the spouses. In other words, the data appears to contain not only the gender of the interviewee, but also multiple genders at actual (this and now, what we can see) and cultural (what is thought about things underneath) levels that are combined by the actors of the interview process.

Such reflexivity and flexibility of qualitative interview have been criticised for being too subjective to be scientific (Rosenblatt 2002). Moreover, it could be said that if qualitative interviews are about communication between the interviewee and the interviewer, the data will only illustrate the interview itself, not the outer world and the interviewee's relationship to it (Silverman 2001, 97). This perspective may lead us to argue that if this is the case, there is no point in doing any research as no wider patterns of behaviour and attitudes can be found. What we are able to find is only someone's truth, his/her own reality, and it is not linked to other people's perceptions. As Silverman (2001, 111) puts it:

There is a tension in constructivism between internalist and externalist versions of interview data (...) some constructionists (...) are not too sure whether interviews are purely local events or express underlying external realities.

I attempted to overcome this problem by using a loose structure alongside the open-ended questions in my interviews. The questions were the same for all of the respondents, but the structure was not a rigid formula to be slavishly followed. In practice, I let the interviewee to determine the concepts and words used, and tried to adjust my questions and comments to fit the interviewee's speech and meanings. At the start of the interview, this was pursued through the questionnaire in which the respondents were asked to ascribe gender to different domestic appliances. At this point, I did not guide their answers in any way, but tried to accommodate their terms and style of meaning-making. Put differently, I could adhere to the principles of the qualitative interview, but in such a way that the interviews (and the same questions) of different interviewees could be compared with one another (Johnson & Weller 2002, 499). In addition, I agree with Silva (2010, 28), who argues as follows after interviewing and analysing families in terms of domestic technologies:

To deal with the complex realities of people's lives, my sample design favoured depth rather than breadth and I am clear that there are limits to the generalisation of the cases I studied. At the same time I am sure that the uniqueness of people's stories represents generalisable patterns of the everyday life in domestic settings. This is not to say that these worlds of my investigation are not messy, fluid and contingent, or that I wish to impose an artificially created scientific order upon people's lives (Law 2004, Law & Urry 2004). It is simply that in my understanding the world is not infinitely messy

and that the complexity of heterogeneous realities can be grasped without the imposition of orders.

In terms of my research, the generalisation aspect of the data could be justified by the fact that the data started to accumulate: that is, I noticed that the new respondents talked in the same way as the previous interviewees had talked. In my mind, this was a clear indication that some sort of generalisations could be pursued and no new issues would emerge.

3.2 Three Steps to Realise the Interviews

Selecting the Topic

Johnson & Weller (2002, 496) write that “[t]he very first step in interviewing is the selection of a topic area for exploration”. The inspiration and one of the reasons for my research interest can be traced back to my master’s thesis, which examined the notion of home. Its main research questions were: What is a home? What are the elements of the home? What do people consider a bad and good home? And finally, how can we talk about the home in the context of Finnish society?

During the research for my master’s thesis, I coincidentally found the presentation text of the Project “Oxygen” (The MIT Computer Science and Artificial Intelligence Laboratory, Cambridge, USA) on the Internet. In it, the researchers of the project state that they are developing “human-centred computation” that is freely available everywhere, irrespective of time and place. This technique is also said to “respect our desires for privacy” and “handle our goals and needs helping us to do more while doing less” (MIT Project Oxygen). Such technology and appliances are seen in the visions of “smart homes” that can be briefly defined as homes containing interactive technologies (see, for example, Harper 2003, Aldrich 2003).

Project Oxygen’s proclamation seems very one-dimensional, and to be honest, quite unbelievable when compared with how the interviewees defined home in my

master's thesis. Most of all, it differs from the interviewees' attitudes to domestic technology. Domestic technology stimulated people to voice very eager and critical opinions, and all of them argued that home was formed of deeper elements, such as familial and social relationships, rather than material values. On the other hand, home was associated with some technical gadgets, and particularly the youngest interviewees talked about entertainment technology as an inevitable part of their notion of home. This contradiction made me think about the existing domestic technology in terms of the home and housing in the future.

As their advice for the selection process of the research topic, Johnson & Weller (2002, 496) argue that the researcher should not be too close to his/her subject in order not to elide details for their obviousness. Further, they note that familiarity with the research topic "may give respondents the impression that the researchers already know the answers to the questions asked". Obviously, I could not fully take advantage of such advice. I use domestic technology myself – I have always used – and I have my own opinions on various appliances and their use. Consequently, I was not able to act like "an ideal researcher", that is, a detached, objective scientist. Following from these terms, I was in danger of becoming "field blind", unable to perceive data and surrounding culture as clearly as possibly. I had, as Kate Fox (2004, 3) ironically notes in her study about English people, "an on-going battle between my Inner Participant and my Inner Observer". However, the same ethnographic rules that are formed for anthropologists trying to uncover a strange, distant culture cannot be applied as a whole to such research where the researcher studies his/her own culture. To quote Rubin & Rubin (2005, 29), whose argument guided my actions through the interviews:

Interpretative researchers do not need to drop their cultural assumptions and assume those of the conversational partners, but researchers do need to be cautious lest they fail to hear the meaning of what the interviewees have said because their own cultural assumptions get in the way. The ability to get into the world of someone who does not share one's own lenses requires an ability to first recognize and then suspend one's own cultural assumptions long enough to see and understand another's.

Selecting and Finding the Interviewees

After having found the topic of domestic appliances, the second step was to find the right people to be interviewed (Johnson & Weller 2002). Rubin & Rubin (2005, 64) write that interviewees should be at the same time experienced and knowledgeable. The first demand was not a problem as Finland is among the most technologically oriented countries in the world. In 2006, for example, three out of four people aged from 15 to 74 years old used Internet in Finland, and the number of users reached almost 100 per cent when only the citizens under 40 years old were considered. Similarly, 97 per cent of the households owned at least one mobile phone and 95 per cent had a minimum of one television set in August 2006 (Statistics Finland). As Pantzar (2000, 12) notes, in the course of fifty years Finland has become a role model of an information society. Historically inspected, Finland became wealthy quite fast after the wars, and private consumption increased at the same pace as in leading countries of Europe (*Ibid.*, 139). When contemplated in terms of domestic devices, the Work Efficiency Institute (TTS)¹³ and its instructions for housewives, as well as banks' promotions for target saving in households had a large impact on the technologisation of the domestic realm (*Ibid.*, 41-84).

Accordingly, all Finns (excluding very young children and most elderly) have at least some kind of experience of technologies in the home. The demand of knowledge, however, presented a problem for me. I did not want to choose only respondents who share a special knowledge about technologies, for example, through their work or hobbies. That would have produced somewhat marginal data without information about "ordinary" people with "ordinary" skills and competence. Subsequently, I decided not to set any preconditions of knowledge to the interviewees, and the data is composed of people with limited, moderate or substantial experiences. I maintain that the credibility of the results was hence enhanced because I interviewed people with a variety of perspectives. Again, I had better chances to form a full-scale description of domestic appliances when the data included people with complementary understandings (Rubin & Rubin 2005, 67).

¹³ "Työtehoseura, TTS" in Finnish.

Hertz (1995) points out how separate interviews with spouses provide valuable information about the decision making in the families. In the same vein, Riggins (1994, 109) argues for separate interviews of the family members as follows:

With respect to domestic artifacts, some of the nuances of this selective memory may be lost if family members are interviewed together. In separate interviews discrepancies can be expected not only with respect to the mapping function of objects but also with respect to referencing because gender differences entail a number of gender-specific objects and forms of expertise.

Thus, to illustrate how the same devices in the same household may generate different interpretations, I decided to interview the couples separately. Possible children, however, were not interviewed. Admittedly, it could have been fruitful to add children's responses to the data. With that focus, it would have been possible to analyse domestic appliances in terms of the social interaction within the whole family. The main reason to exclude children from the interviews was their age: most of the children were so young at the time of the interviews that it would have been quite impossible to interview them.

The first demographic criterion for finding the right couples to interview was gender. I wanted to examine whether gender influences the inhabitants' relationship with domestic appliances, and therefore decided that the couple would include a man and a woman. In addition to both genders, I chose couples of different ages and marital status in order to find out whether the age or situation in life influences the relationship with domestic technology. Third, I wanted that all of the interviewees lived in an owner-occupied flat or house. The reason was simple: it can be assumed that people in owner-occupied properties invest more money, affection, and attention in their home than people in rental properties, which are more likely to be provisory in nature (Aaltojärvi 2005).

Deciding on the right respondents to illustrate the complex nature of domestic appliances was not straightforward. At first, I considered whether I should interview people who were at that time in a process of building a detached house. I expected that they, in contrast with the ones living in flats, would more frequently confront house-networking issues. Nevertheless, this did not feel like the right solution to me. Smart homes can mean other than completely networked households. It is enough that there are at least two or more devices that communicate with one another, which

is one of the definitions of smart home in literature (Aldrich 2003). Consequently, there is no need to build large-scale solutions in the infrastructure of a house, and smart home applications may also be located in a flat. Furthermore, the future is likely to present more innovations without wires and cables. Different kinds of wireless power-transforming techniques are rapidly being developed, which, according to engineers, should make it possible to install smartness into homes without complicated cabling (for example Barlow & Venables 2003, 253-255).

In the end, the distribution of the interviewees was as follows:

Table 2. The Interviewees by Age, Occupation, Children, and Form of Living

Couples' ages	Occupation (respectively)	Children	Living form
Woman 23, man 23	Sales person and circus artist	No children	Flat
Woman 25, man 24	Nursing student and electrician	No children	Building a detached house
Woman 33, man 39	Journalist and warehouse worker	2 children	Detached house
Woman 34, man 39	Photographer and art director	Pregnant	Flat
Woman 43, man 38	Upholsterer and entrepreneur	1 child	Detached house
Woman 53, man 48	Art director and handyman	No children	Flat
Woman 52, man 52	Secretary and house manager	1 child (adult)	Flat
Woman 60, man 62	Retired (hairdresser) and retired (entrepreneur)	1 child (adult)	Detached house
Woman 74, man 76	Retired (textile worker) and retired (chauffeur)	2 children (adults)	Detached house
Woman 79, man 78	Retired (cook) and retired (lorry driver)	2 children (adults)	Flat

Table 2. shows that ten of the respondents lived in a flat, and ten in a detached house. Six of the couples did not have children whereas the rest had a maximum of two children or were expecting a baby at the time of the interview. The youngest interviewee was 23 years old and the eldest had almost reached the age of 80. Also, the age followed an even distribution: five of the respondents were under the age of 35, nine were in the middle, ranging from 36 to 55 years old, and the rest were over

55 years old. My purpose was not to find a representative sample of a larger population or generalise and form any "average" image of the domestic technology user. Rather, my aim was to gain understanding about the phenomenon as a whole, which directed me to look for a sample of interviewees with different characteristics.

The search for the interviewees was conducted with the so-called snowball method: when I located one potential interviewee, she/he directed me to the next one in her/his social circle (Warren 2002, 87). Ultimately, this proved a comfortable and easy way to find suitable respondents, and no one refused to take part in the study. Because of the snowball method, my data consisted mainly of people who were somehow acquainted with each other, but there is, in my opinion, enough variation within it. Besides, this kind of friend-to-friend method is handy if a researcher needs to gain trust in the interview situation. I assume that pre-recommendations by the former interviewees influenced the future respondents so that they felt relaxed with me and the interviews proceeded fluently.

In addition to the absence of children, another restriction of my data was that the interviewees were all based in one region. At the time of the interviews, all of the respondents lived in southern Finland: more specifically in the city of Tampere, which has approximately 200 000 inhabitants. With this in mind, the results do not describe the whole of Finland. Finland is, after all, quite sparsely populated with its wide countryside opposed to a few dense population centres, such as the capital area of greater Helsinki in the south.

In addition, the requirement of living in an owner-occupied house or flat reduced the group of respondents. Young people in an owner-occupied residence are hard to find because the property prices are relatively high in Finland. Compared with Southern European countries, the Finns usually study for quite a long time and at young age may not have had time yet to establish a career with higher wages. One may also criticise my data for being discriminative in the sense that all of the respondents belonged, according to their income, at least to the lower middle class. Moreover, saliently, all the respondents were Caucasian and lived in a heterosexual relationship. My study is, thus, a study about privileged Western citizens, which does not give voice to marginal and oppressed groups in Finland (for example sexual minorities and refugees). At first, this bothered me because I am a social scientist at

heart, and have learned how cultural studies have to emphasise the democratic features of information technologies. This is, of course, very important to keep in mind and well justified because of the danger of digital divide (for example Punie 2005). However, one of the aims of this study is to contemplate domestic technology and its future. Consequently, one could ask whether democracy is the most essential question when designing smart homes. Without dispute, purchasing smart technology will be a great investment, and not all will have the means to achieve such living form. As Selwyn (2003, 102), among others, argues, "the most immediate influences on individuals' engagement with ICT (information and communication technology) are economic and material". In addition, if we studied only the minorities in their relations with technology, it might lead to the marginalisation of the privileged. In other words, it should not be believed that technology relations of the large Finnish middle class are somehow self-explanatory and hence need no exploring (see also Peteri 2007, 18).

Forming the Questions and Conducting the Interviews

There were three main themes I was interested in: domestic appliances found in the household, the interviewees' relationship with that particular technology, and finally, the theme of smart homes. According to the rules of qualitative interviews, the questions presented were not exactly – word for word – the same for all the respondents, and they were delivered in a random order so as to adjust to the respondents' answers. On the whole, all the interviews covered the same themes, and interviewees brought up some "new" questions in some of the interviews. In the next section, the interview questions are organised according to the theme they are related to.

Domestic Appliances in the Household

- Can you introduce to me all the domestic appliances that are observable in your home?
- Which are the most important devices to you and why?
- Of the two most important ones: How did you decide to purchase the item?

- Of the two most important ones: Were there any negotiations in your family about the item that was to be purchased?
- Of the two most important ones: Did aesthetic issues affect the purchase?
- Of the two most important ones: How was the location of the device decided?
- Of the two most important ones: Does the use of the device affect social relationships in your family?

Relationship with Domestic Appliances

- What kind of home would be ideal concerning domestic appliances: What would you have there and why? You do not have take into account whether there is enough money to realise it.
- How would you describe your relationship with technology in the home?
- What is essential technology and what is not? What would you be willing to give up?
- Does domestic technology evoke any feelings in you? What kinds of feelings and in what situations?
- What is the most beautiful device you have and why? What is not so pleasant in an aesthetic sense?
- Can you recall any memory that has something to do with domestic technology?
- What do you first associate with the following words and why?
 - Vacuum cleaner, television, computer, microwave oven, washing machine, egg boiler, DVD player, stereo system, coffee maker, stove, electric knife.

Smart Homes

- Do you know what kinds of plans for future homes there are? What kind of technology will there be in these future homes?

- Are you interested in future technologies? Why?
- What kind of technology do you think future homes should contain?
- If you should design a new device for the home, what would it be and for what purpose? You do not have to think what is technically possible.
- Have you ever heard the term "smart home"? Where?¹⁴
- What do you think about the idea of smart home?
- Would you be interested in investing in the smart home?

These short questions seemed to be enough to prompt people to talk about and tell stories about their homes, domestic appliances and themselves. As Riggins (1994, 107) notes about the ethnography of domestic objects in the home:

At least at a superficial level, interviewing people about their home is not difficult. It is obvious that many people, male and female, enjoy talking about their home. Open-ended, unstructured questions about the means of acquisition and symbolism of domestic objects are usually sufficient to prompt informants to tell lengthy stories.

The interviews were conducted in the respondents' homes. This made sense for three reasons. First, respondents were relaxed in a familiar place, and were able to reach the interview place without any effort. Second, as noted before (for example Tang 2002, 718), the distance between the researcher and the respondent is likely to narrow when the interview is conducted in the latter's home, in the location that is universally considered a place for intimacy and relaxation. Conversation in the interviewees' homes was also convenient considering that all the domestic appliances mentioned in the interviews were present and observable. Some of the respondents wanted to show me the device they were talking about, which was extremely helpful, for example, in the case of "aesthetic" and "not-so-aesthetic" devices.

¹⁴ The smart home is "älykoti" in Finnish. This refers to the future visions wherein homes are equipped with ubiquitous, wireless smart applications and infrastructure.

Pursuing interviews in the respondents' homes, however, demanded special social skills. In modern society, the home is a very private place, meaning that the boundaries between the outside world and the home are important to inhabitants. This relates to control that is essential when creating the home, as people want to be able to decide who visits their homes and when (Aaltojärvi 2005). Moreover, a good impression on one's home, and therefore also on oneself, is critical when an invited stranger, the researcher in this case, enters the home. This became evident since all the interviewees had cleaned before my visit, and nearly all of them served me coffee or beverages, some even with sandwiches and sweet pastries.

This "norm of the clean home" was also seen in another way. Some of the interviewees explained to me carefully, without my asking or other ways implicating that I was judging their home, that they had not had time to clean the house and they were sorry for this inconvenience. It was remarkable because these particular homes were extremely tidy. The cleaning conversation may be part of the common Finnish small-talk with the person who is visiting one's home for the first time. This "prelude interaction" of the interview visits took time and was automatic in nature. It embodied a ritual character, meaning that I intrinsically knew how to respond to that "cleanliness chat" and appraised the respondent's home by making it clear that there was no need to clean for my sake. One could say that this conversation was an inevitable part of the successful interview process, and it demanded cultural and collective knowledge from both of the participants.

3.3 Recording the Interviews: Material Culture of the Method

When interviewing, I used a tape recorder in order to transcribe the interviews afterwards; however, it affected what the respondents said to me and what their attitude was toward me. A similar impact of the tape recorder is noted, for example, by Warren (2002, 91-92) and Rubin & Rubin (2005, 110-112). Rubin & Rubin (2005, 110) state that electronic recording may turn some interviewees shy or hesitant, but may also be welcomed by others as it ensures that the interviewer gets the message right.

While conducting the interviews, the recorder seemed to intimidate and frighten some of the elderly respondents, in particular. The moment I took it out of my bag and asked whether it was fine to record the interview, they started to talk slightly differently: they were more careful with their words and glimpsed at the recorder every once in a while as to make sure it was still there. In one occasion, one interviewee even whispered to me his statements that were critical toward a certain social group. This male respondent, for instance, argued that there are younger people who are overly interested in technology while they do not know how to enjoy life with simple things, such as walking in nature and spending time with their families and friends. He presented his opinion with a quiet voice and leaned toward me, at the same time leaning away from the recorder. The gesture implicated that his statement was shared confidentially with me, not with the wider audience reached through the tape recorder. However, this distrust toward this technical device among the elderly gradually disappeared as the interviews progressed, and in the end, the respondents were not at all aware of this device.

Younger respondents held a different attitude toward my tape recorder. As one may guess, they were more familiar with the machine, and some even teased me in a friendly manner for being old-fashioned and using an archaic tape recorder, instead of the most recent digital technology. Interestingly, they thought that as a technology researcher, I should use up-to-minute devices.

In one case, the recorder directly affected the interview when the 46-year-old male respondent with a long and thick hair tried to "cheat" the tape recorder. The incident occurred when I asked him whether he thought that the hairdryer is more feminine than masculine in nature. Here is an extract from the interview:

Q = Interviewer

A= Respondent

Q: What about the hairdryer, do you find it feminine or masculine?

A: Well, it's feminine.

Q: You don't use it, or why is it feminine?

A: No, I don't use it because I don't have hair.

Q: (Surprised and confused) But you do have hair...

A: Yes, I do, but I cheat that machine (points at the tape recorder and laughs for a long time). It's feminine in a way that women doing their hair come immediately to mind.

The tape recorder also posed another challenge. When the interview had officially ended (I had thanked for the interview, and the interviewee had told me that there was nothing more to say), and I had stopped the recording, the respondents still continued to talk about the themes that we had discussed (see also Warren 2002, 92). A few times, I interviewed the wife first, and when it was her husband's turn, the wife returned and wanted to carry on talking about the issues she had thought further after her interview. These women seemed concerned for having given me a wrong picture about them and wanted to correct and elaborate on some of their statements. One interviewee had thought about designing a novel domestic device (of which I asked in the interview) and came back to me in order to explain what kind of ideas she had created after the official interview. This tendency to discuss "off the record" showed me that I could not rely solely on the tape recorder but had to make manual notes, too: If not on the location, but right afterward when the events were still clear in my mind. To quote Carol Warren (2002, 92), "unrecorded data of this kind are as important as those derived from tape recordings".

The interviewees viewed the tape recorder as very human – as if it were the third participant in the interview: it was something that was listening to them together with me. This is a good example of technology being more than just material and objective. Technology, and material artefacts overall, constitute a large part of our social worlds and they are not only "simple things to be used". As Tim Dant (1999, 2; see also Molotch 2005, 11-13 and Tilley 2006) writes about material culture: "Things of the world are incorporated into social interaction and provide an embodiment of social structures reflecting back the nature and form of our social world." This influence of material things, as here in the method I used, is too often ignored by social scientists as they have a tendency to raise the social over the material (for example Kopytoff 1986, Latour 1993, Olsen 2003; 2006, Prown 1982). Dant (1999, 9) proposes that this may be due to material culture that is too close and too familiar and therefore hard to explicate. This familiarity holds true, as we can see

in my case. Familiar actions are conducted routinely and they do not usually demand extra contemplating or planning. Only when something obstructs them, do they become unfamiliar, and often also distractive (Jokinen 2005, Kosik 1976). To rephrase, familiar and everyday things progress without people noticing them so long as there are no hitches or disturbances. As with the recording of the interviews, I might not have noticed the influence of the tape recorder had it not led to awkward moments in the interaction.

3.4 Gender in the Interviews

Many studies point out that interviews and their results are largely affected by social identities and locations, such as the gender of the interviewer and the interviewee (Arendell 1997, Oakley 1988, Padfield & Protecter 1996, Reinhartz & Chase 2002, Riessman 1987, Schwalbe & Wolkomir 2002, Tang 2002, Williams & Heikes 1993). At the same time, it is commonly noted that gender only cannot explain all the variations between different interviews and the degree of the hierarchical power relation between the researcher and the respondent. For example, Riessman (1987) illustrates how the racial and class background hindered the interaction between an academic Anglo researcher and a Hispanic working-class interviewee.

However, some kind of gender effect on interviewing has been proved in empirical comparisons. Padfield & Protecter (1996) and Williams & Heikes (1993), among others, conducted studies in which both researchers – one female and the other male – presented the same questions to the respondents and held the same understanding about the research in question. In the case of Padfield & Protecter (1996), the researchers interviewed young women and concluded that there was consistency in the interviews by both genders until the question of abortion was brought up. It was evident that the women interviewed by the female researcher volunteered to tell about their abortion experiences, when none of the interviewees told that information to the male researcher. In the case of the male nurses who were interviewed by Williams & Heikes (1993), the influence was found the other way around. While this research reported no great differences between the interviews conducted by the researchers, the way they were talked to differed depending on whether the researcher was male or female. The interviewers noticed a so-called

“social desirability bias” as male nurses voiced their opinions on gender issues differently according to the sex of the interviewer. There was, to quote the researchers (1993, 285), “the tendency of people to ‘adjust the truth’ so that they sound nicer, richer, and more desirable to the researcher”. Indeed, the male nurses formed their answers to the female interviewer in a soft manner in order not to appear sexist.

Obviously, domestic appliances are not as agonising a subject as, for example, abortion, and cannot as such be compared with my interviews. The result of the latter research concerning male nurses, gender and the interview process, however, sounds quite familiar. Domestic technologies are not only rational gadgets but, as I mentioned earlier, interlaced with such gender sensitive issues as the domestic distribution of labour. I believe that being a woman did have an impact on how the interviewees talked about certain issues in a socially appropriate way. This became particularly evident when the male interviewees sorted out the devices according to their feminine and masculine qualities. An example of this was a 78-year-old male interviewee and the way he rationalised his opinions by expecting my approval for his beliefs several times. In the extract below, I asked him why he thinks the coffee maker is a feminine object:

I usually, if I make...I sometimes make afternoon coffee. But usually my wife takes care of it, too (laughs). She always says to me that you make really good coffee. This could also be ...but according to the old tradition, it is women who take hold of the handle of the coffee pot (laughs). Do you think this is a crazy explanation? Or is this a good one, what do you think?

Feminist scholars have often concentrated on woman-to-woman interviews in which, they argue, it is possible to give women a voice in the masculine world (for example Oakley 1988, Reinhartz & Chase 2002). It is sometimes suggested that so-called “sisterly bonds” are likely to form between a female interviewer and a female interviewee. Conflicting with the positivist idea of objective and detached researcher, an intimate interview situation may sometimes even lead to a relationship (Oakley 1988). I found that the female interviewees occasionally treated me as an associate with whom they had a secret alliance: for example, this was visible in the way they looked at me and spoke to me in a silent voice, at the same time glancing at the room where they knew, or believed, their male partner was at that time. The most common

subject to elicit this kind of “alliance talk” was the washing machine that was considered women’s responsibility. In the following quote, a 52-year-old female interviewee talked about men and washing machines, and expected right from the beginning that I as a woman would know what she was talking about (and I have to acknowledge that I actually did know what she was talking about):

I’m responsible for the laundry in our family. I know many other families in which the man stumbles already at the sorting of it (laughs and looks at me knowingly). It’s just... women bother to read the washing instructions in clothes and sort them accordingly. Men just stuff all into the machine and hope that everything goes well.

Men, contrary to the female interviewees, did not consider me their colleague, but tended to test me and my knowledge about technology. Although the interviews with the male respondents were principally friendly and evolved naturally, some male interviewees also liked to “take charge” of the conversation, which is a feature other researchers have noted earlier, for example Terry Arendell (1997) and Shwalbe & Wolkomir (2002). In her study, Arendell (1997, 350) interviewed divorced fathers and observes how “nearly all of the fathers in the study, unlike the mothers in the earlier one, took charge, establishing that they were collaborators if not actually conductors of this research enterprise”. In my research, I realised that the male interviewees sometimes challenged my methods and questions, and in some cases they started lecturing to me as if I had been their student. This usually happened with the themes that required some technical understanding, and the interviewee was considerably older than I was. A 61-year-old male respondent, for instance, told me about their new air conditioning system and gave me a systematic explanation about it:

Earlier we had oil heating here, but when we renovated I thought that it would not be reasonable to renew the plumbing and the whole system so we switched to electrical heating. Because of the two-tariff system and cheaper night-time electricity, I chose these storage heaters. Now the rates of electricity have changed and night electricity is no longer cheaper, so it was the last straw in our decision to start using the air source heat pump.

This kind of thick and precise technical description was only given by men, and it was presented in a particular voice which resembled that of a teacher or a sales person drawing a distance between me and the respondent. This is a gendered trait

in terms of accounts concerning technology that has also been detected by Hynes et al. (2006, 39). Women, as I illustrated earlier, were more likely to bond with me and tried not – at least not so visibly – to change the social positions during the interview.

Shwalbe & Wolkomir (2002, 204) argue that men tend to bring out and highlight essential elements to the masculine self in research interviews, which is their so-called dramaturgical task in them. Further, the interview situation may cause an unconscious threat to some men because the interviewers are likely to be in control (asking questions and directing the speech), which can be seen opposing the masculine self consisting of “control, autonomy, rationality, risk taking and heterosexual conquest” (Shwalbe & Wolkomir 2002, 205). This kind of generalisation may exaggerate, but whether this phenomenon was linked with “threatened masculinity” or not, its implications could be seen in the interviews. I want to emphasise that this is not to say that all women were “underdogs” in the interviews or always acted friendly towards me. Some women protested quite strongly, for example, in the task in which I asked them to separate various devices into feminine or masculine. Their objection, however, was made in a different manner compared with the male interviewees. Women tended to say if they thought something was “unfair” or otherwise dubious, but they also took into account that they were doing it for the purpose of the study and asked whether their reluctance or hesitation posed any harm to my work.

The research interviews made me contemplate my own gender regarding the interface between my person at work and at free time. Tamminen (2003, 120) notes, following Ronkainen (1989), that the interviewer’s status and gender may strongly affect what kind of talk the researcher is able to gather. As Tamminen (2003, 120-125), I also accept that this can be seen in my data, and there are several frames through which the gendered interaction could be examined. On the one hand, I represented an academic status, and the interview was a formal procedure wherein the interviewer delivered a question which the interviewee answered. On the other hand, as a young woman I also had a certain look that might have affected the ways the interviewees responded to me: I looked younger than I was and had a very short black hair. Furthermore, I usually wore quite an androgenic outfit, such as jeans and a T-shirt. If asked to describe a stereotypical feminist, one might have depicted me

at that time. With this in mind, it may not be such a surprise that some of the respondents spoke to me as they did.

That said, the situation evolved back and forth during the interviews, and the conversation between the formal interview frame and the informal “researcher as a young woman” frame fluctuated as the themes changed, and the interviewee “learned” how I interpreted my role in the situation. Sometimes, as analysed earlier, male respondents adopted the role of an educator and treated me as their young pupil. Yet in the same interviews, there were also places where a formal turn occurred, and we returned to the frame in which I was considered controlling the interaction.

4 Purification of Technology

Each household appliance is
like a new science in my town

(The Smiths: Nowhere Fast)

In chapter 2, I introduced Bruno Latour's (1993) notions of "purification" and "hybridization" (pages 37-39) and these terms steer this analytical chapter and the following analytical chapters 5 and 6. In this chapter, I concentrate on purification that describes how modern people tend to treat and think about technology and technical appliances as free of social elements. At the same time, this means that people demonstrate agency in terms of technology and place technology somewhere lower than humans and social relationships.

In this chapter, I analyse the strategies people deploy in order to control and manage technology in domestic environments. On the one hand, technology is seen resembling technological determinism: as something that affects us in certain ways no matter what we do. On the other hand, people use discursive and practical means to confront this view. There is something very contradictory in people's meaning-making processes with regard to domestic appliances. By analysing the interviews, we can see that the most effective counteraction toward technological domination and its consequences is purifying, normative and moral in nature. With such resources, people try to put technical devices "in their right place" in their routines and homes. In one sense, it could be said that technical devices co-habit with us: as well as organising family members' everyday life and routines, these material objects have to be sorted so that they fit the entity of everyday life and home. Put simply, they have to be put in their place. Silva (2010, 188) aptly notes that "technologies are complex and messy (Hughes 2004) as the social worlds of which they are a part". Using purification is, one could say, a coping mechanism for this messiness, allowing people to create order in their everyday life that is otherwise complex to manage.

Analytically, the purification process attracted my attention in those parts of the interviews where the respondents were talking about "just devices", that is, mere or only devices. This "just"¹⁵ occurred frequently in all of the interviews, and for me, it was the first sign of purification. In order to elaborate in what kinds of contexts purification exists and with what it is associated, I traced all the phrases in the interviews that included the word "just".

Gubrium (1988, 23-39) writes about three types of ethnography: structural, articulative and practical. The aim of the first type, structural ethnography, is to understand people's subjective meanings. Articulative ethnography is, instead, more interested in how these meanings are constructed in the structures of interaction, and the third type, practical ethnography, is a well-balanced combination of structural and articulative types. As Gubrium (*Ibid.*, 34) explains:

I have attempted to develop a practical ethnography. Its guiding metaphor is the practitioner of everyday life, one who, together with others, engages the matter of configuring the meaning of things and events in their worlds in order to conduct the latter's concrete business. Practitioners of everyday life not only interpret their worlds but do so under discernible auspices, with recognizable agendas.

My procedure of searching for the occurrences of "just" could be identified as articulative in nature as I regard the respondents' meaning-making process as inherently related to this "just" in their utterances. "Just" occurs always in relation to something because its meaning is not constructed in isolation, and technology is considered subordinated to something. However, my underlying idea also resembles structural ethnography as my aim in this chapter is to show how the respondents give meanings to domestic technologies with the help of purification. With this in mind, my method could be considered practical: the combination of structural and articulative types of ethnography.

When the interviewees try to put technologies in their right place and purify them, they emphasise their functionality and practicality. This was the clearest example of the so-called "just-talk". For instance, one of the male interviewees said that "gadgets are just gadgets to me", while another, female respondent noted that "[w]hen the

¹⁵ In Finnish "vain" or "pelkkä".

domestic devices work as they should, then they just are. You don't sort of see them at all". Such explanations imply that domestic appliances are considered subordinate to sociality and highlight the fact that people can – and should – control the devices and their use, not the other way around. Following Latour's analysis, it could be contended that the interviewees purify technologies by emphasising the functionality of gadgets and the inferiority of objects to humanity. It is this stance of "devices are just devices" that sustains the dichotomy between nature/science (= device) and society/self (= interviewee). However, as we shall see in this chapter and more elaborately in the later analytical chapters, devices are, alongside their practical features, also deeply social, and the interviewees cannot help expressing social aspects when they talk about domestic technologies.

Acknowledging the social in technology is not a new way to approach technical objects in social sciences, and it is commonly agreed in science and technology studies (STS), which apply the notion of social construction, that "technologies are not purely technological", and "[i]n particular, they embody social, political, psychological, economic and professional commitments, skills, prejudices, possibilities, and constraints" (Bijker & Law 1992, 8). However, in STS, technology is typically addressed from the perspective of technology trajectories, and many studies focus on the processes of how a certain technology – for example an incandescent light bulb (Bijker 1992), aircraft (Law & Callon 1992), train (Latour 1996), or photoelectrical lighting kit (Akrich 1992) – comes to be as it is. To supplement the focus of these studies, I concentrate on domestic appliances that are familiar: what kinds of meanings they are attached with, and what kinds of positions they have acquired in the homes. My method could be compared with the studies of domestication. In domestication, it is often assumed that technologies are eventually domesticated in the home environment, but I argue that this is not necessarily the case. In fact, some basic appliances are not domesticated at all. Rather, they are controlled and purified. I will return to this issue at the end of this chapter.

I will show in this chapter that the purification processes of technologies are normative and moral in nature, and when recounted, they are expressed as culturally and socially obvious and desirable, sometimes even as obligatory. There seems to be something profoundly ethical and moral in these views. Morality and normativity, one could say, are further means to purify technology. Technology is considered so

powerful that people have to use effective strategies in order to gain superiority over it. Marking technology as moral is to imply that if someone does not think about technical devices and use them in these ways, she/he must be an unethical, deviant person who therefore does not fit in the existing cultural order. In regard to these moral and purifying accounts of technology, I follow Silva (2010), who focuses on moral sentiments of home and technology. As we shall see in terms of different controlling accounts of domestic appliances (pages 86-96), moral obligations are deeply connected with the everyday practices of home. In the words of Silva (*Ibid.*, 141): "[M]orality is not formal and abstract, but that it is tied to concrete and material circumstances, rather than being based on a set of principles; it is an activity grounded in the daily experiences and moral problems of real people in their everyday lives."

This chapter starts with a brief analysis of accounts resembling technological determinism: depictions that at the same time aim to control technology. Subsequently, I focus on these counter-strategies. First, I introduce different moderation accounts and analyse how the interviewees try to keep technologies under control by restricting money and technical features, energy and disposal, and time. Second, I address the relationship between home and technology and consider the practical and mental ways that are used to raise the notion of home over domestic appliances.

4.1 Determinism, Humanism and Technology

As mentioned above, technology was considered something that just "comes and affects" us, that is, having automatic consequences. In other words, technology was seen as a somewhat threatening and overwhelming phenomenon that has to be kept under control and managed. This kind of thinking in social sciences is called technological determinism (see, for example, Bimber 1994, 81-89; Dant 2005, 34; Feenberg 2010). Feenberg (2010, 8-9) outlines that determinism is based on two presumptions. To begin with, technical progress is seen to "follow a unilinear course, a fixed track, from less to more advanced configurations" (*Ibid.*, 8). To continue, it is assumed that "social institutions must adapt to the 'imperatives' of the technological base" (*Ibid.*, 9).

In my data, the respondents echoed two kinds of technological threats and dominance that resemble technological determinism of social sciences. First, technology was seen as affecting social behaviour and the essence of humanity. Second, the interviewees revealed their concern regarding the future of domestic technologies; one of these apprehensions was the distress that was caused by the inability to foresee all the consequences that future technologies may have on society and on people.

The autonomous nature of technology was part of the "just-talk" as sometimes "just" was used to describe the overwhelming technology that "just" comes into our lives. In some cases, this was observed in the private sphere as several female respondents told me how devices "just come here". In the words of a middle-aged female interviewee: "I hadn't even seen that machine before it just came here." Assumingly, it was her male partner who had brought the device into their joint home, yet it was considered having some power of its own. The independency of objects to act has been quite thoroughly addressed in critical sociological approaches toward material culture (Woodward 2007). As Woodward (*Ibid.*, 53) remarks: "Consumers encounter material culture as something that is 'external' to them, as if magically appears on shop shelves, rather than having a history."

Externality was also seen outside the private sphere, and technological dominance and autonomous nature was expressed in the interviews through its facelessness. For instance, a 52-year-old female interviewee argued that "technological changes force people to adapt to technical devices little by little. It comes from outside, that pressure to use them". Further, she continued that "[i]t takes a lot of energy from a person when some new device comes into home". The extract illustrates a widespread idea associated with technology: it comes from outside to pressure us, but we do not know exactly where it comes from. Technology just enters our homes, and we cannot do anything about it. In addition, many of the respondents talked about the digital age in broadcasting¹⁶ and criticised this transformation by stating, for instance: "We are forced to do that [change into the digital television], it is sort of compulsory" (a 78-year-old male), or "You see, for example, this digital television.

¹⁶ On 1 September 2007, the whole television broadcasting system in Finland was switched from analogical to digital. This transformation was not widely welcomed by the citizens: 32 000 television viewers stopped paying their television licenses as a protest in 2007 (*Taloussanomat*, 5 February 2008).

We all have to go with it, and then they create new apparatuses in accordance with the change" (a 51-year-old female). Such accounts were common and direct attention to the unknown that is usually regarded as threatening in our Western culture¹⁷. First, it is unknown where technology comes from and where it leads to. Second, when an interviewee talked about some human force acting behind technology, it was unclear who these people were as they were only referred to as "they".

Interestingly, when some interviewees thought about these unknown others behind technological changes, they pointed their fingers at engineers. Engineers were referred to as a group of people who are bright and innovative but at the same time arrogant and unable to understand human nature and everyday life. One elderly male interviewee, for example, argued that technologies try to rise over humans and remarked ironically that "[t]hey say that human is wise, but not as wise as an engineer". An engineer was a person that no one wanted to be and whose actions were considered unethical, dangerous, and big-headed compared with those of the common people, that is, those who have to use the technology. Accordingly, talking about engineers was a method of emphasising one's positive identity, taking a moral stance in terms of technology. As another male interviewee pondered how new technologies should be designed: "There should be an option to use the manual system, too, in the devices. But they do not think like that at all, those engineers."

Following the idea of purification, interviewees tried to separate engineers and technical objects from human values, and these two were seen as strictly opposite despite the fact that social and cultural issues were mixed in their accounts in other parts of the interviews (see later in this chapter and the following analytical chapters). One could say that in order to construct a positive identity for themselves, interviewees mentioned engineers and designated them as different, that is, unethical and inhuman. To underline the difference between cold technology and ethical values was one of the methods of putting devices in their right place in the cultural

¹⁷ See, for example, horror films about aliens and extra-terrestrials, undefinable creatures that come to conquer the world. These stories play with a fear of strangeness and imply that what we do not know and what exceeds the limits of human understanding is dangerous to humankind. As Feenberg (2010, 19) writes about how technology is interpreted, "more ancient layers of meaning crystallize around invisible threats and fear of the unknown".

order of things. To illustrate this, one middle-aged female interviewee explained her point of view on technology:

A: I think it tells something about a person's values if she/he raises technology over everything else.

Q: Do you see those people as different from you, and what are their values, then?

A: Yes, I do see them as different, and I do argue that technology belongs to cold, inhuman values.

This statement demonstrates a clear purification of technology: it belongs to cold values and to cold people, and it could only be seen as a rational device (see also Norman 1993 who points out the clash between the 'hard' nature of technologies and the 'soft' nature of the expected users). Also, an elderly respondent used the word "cold" to describe technical objects when I asked him whether technology evoked any feelings in him: "No, they do not evoke feelings in that sense. They are such cold fellows that you do not want to talk with them that much." This statement is very interesting in an analytical sense as it contains a controversy: technologies are cold objects, but the interviewee still uses anthropomorphism as he refers to them as fellows who may be talked with.

The same respondent continued later in the interview to compare machines to humans, but this time he criticised an appliance that is designed to help with picking berries: "Three years ago I bought a device for picking berries, but I want to use my own five-spiked machine to pick them. I did not know how to use that device; it picked only trash and twigs." Despite mixing machines and people in his utterances, he manages to point out what the right precedence should be, that is, technology is valued lower than humanity. By depicting his own hands as a machine ("my own five-spiked machine"), he implies that humans are more effective in pursuing some tasks than complicated devices that end up only picking "trash and twigs". To return to his former comment on cold technology, the respondent manages to purify technology by denoting that one is only able to talk with humans because technical objects are so cold that "you do not want to talk with them that much". Accordingly, humans are considered breathing and alive, warm and reciprocal, and technologies, in turn, are purified by describing them as cold and dead, not as something one could interact with.

One reason for interpreting technologies as cold may be traced to their material essence. As Judy Attfield (2000, 130) argues: "Certain objects lend themselves more readily to certain meaning, for example photographs to memory." Technical objects are materially hard to touch and contain electricity, something that usually connotes danger. Compared to, for example, a sofa, it is clear why technical devices are considered cold. Furthermore, interaction with novel gadgets is usually quite one-sided and determined by the device and its user interface. In contrast with human-human interaction, "cold" is an adjective that is used for describing a person who gives nothing of her/himself in interaction or declines to interact at all.

4.2 Purification of Technology with Discourses of Control

In accordance with technological dominance, respondents expressed counterviews that were used for putting technologies in their right place, that is, purifying them and representing them as devices that are controlled, managed and mastered by their users. These views consist of moderation accounts that stand for the ideological norms and practical acts used in order to retain power for people over domestic technologies. These discourses are closely related to the ones in media, and early social sciences (see, for example, Mumford 1934 for "purposeless materialism"). Interviewees articulated three kinds of moderation notions: money and technical features, energy and disposal, and time. These are introduced next, respectively.

Controlling Money and Technical Features

In terms of domestic appliances, moderation in money was used to emphasise that one should invest money only in the devices that are truly used and needed in the household. In their accounts, all of the interviewees, all wealthy middle and upper middle class, expressed a norm of behaviour: people should make comparisons between different devices and inform themselves of what features they personally need. A 34-year-old female respondent who was an enthusiastic cook and baker described "the right way" to purchase domestic technology as follows:

Q: What about your stove, what kind of purchasing decision was it?

A: The criterion was the same as with the computer. It has to be powerful and good-looking. You should not buy a good gadget if you do not use it a lot, in my mind.

Q: What is a good gadget?

A: Well, it lasts in the use for what it is designed for. You do not have to buy the best in the world and the fanciest one if you do not need it; it should be suitable for your personal use.

Because the respondent needed a computer in her work, and cooking and baking were her dear hobbies, she had invested money in related devices. However, she insisted that not everybody is allowed to do the same: consumers should contemplate what their personal use is and only then buy a suitable gadget for it. Some motives were commonly considered justifying an expensive technical object. As our previous interviewee illustrated, the common rationale behind an expensive acquisition was that the appliance was used either in paid work or in a personally important hobby (see also Luomanen 2010). Some respondents added the design factor to this list by noting that a device can be a decorative item in the home; a highly designed appearance was usually considered implying quality and effective performance, as well.

Moderation in money was closely linked to moderation in technical qualities. The same female interviewee as in the extract above continued to express her ideals in technology purchases by elaborating on this connection:

If you use your computer only for writing, then there is no justified reason to buy a really powerful device with a huge hard drive, a lot of memory, and with graphics cards and everything. There is no point in it, it is just a waste of money. For example, I have seen people buying a full version of Photoshop even though they do not know what to do with it, and the smaller and cheaper version would have been sufficient for them.

Accordingly, the price of the device is associated with the number of its features ("it is just a waste of money"). Further, people should know what they are paying for, which means that their own actions and capabilities should be evaluated in accordance with the qualities of the device. In many interviews, this was mentioned as a demanding task; sometimes more qualities were said to imply that the device would be more complicated to use. However, the sense of saving money – whether

that really is the case or not – is essential when acquiring a new domestic device. As Miller (1998a, 56-59) notes in his study on shopping, buying good quality may be considered saving money because shopping is perceived as a skill and "spending is a dominant form of saving".

Ideally, purchasing domestic technology was seen as a rational process in which the first step was to analyse the individual need, the second was to study and evaluate different devices in the market, and the final phase was to select the device with features that fulfil the need. However, some respondents were self-reflective enough to admit that this was not always the case, and sometimes a certain technical object was bought spontaneously just because of an urge to buy something. To follow Sørensen's (2006, 54) analysis of the domestication of the mobile phone in Norway, "many admit breaking the rules they themselves suggest". If interviewees admitted slipping into this kind of unethical behaviour, they would commonly explain their own conduct with irony, demonstrating that their mistake had been noticed and contemplated. In the next excerpt, one of the male interviewees reflects on his passion toward entertainment technologies:

Well, these objects I fancy are for some reason always entertainment technologies. I don't know why they fascinate me so much. I know that they sell the same gadgets over and over again, but there is still something so cool about them that you just have to have them. You are happy for two weeks, but then you start to wait for the next innovation (laughs). At some point, I changed my mobile phone three times a year, but no more. Well, okay, to be honest, my current mobile is not even a year old. However, I still believe that I have recovered from that nasty illness.

The respondent's laughter and reference to a "nasty illness" imply that self-irony is a method that softens and validates unwanted purchasing behaviour. In addition, to maintain a competent and socially acceptable self requires that one is able to show reflection and remorse regarding one's unethical conduct in the past. Once again, the people behind technical innovations are called "they", and it is "them" the respondent is wary of and knows "that they sell the same gadgets over and over again". The facelessness that I introduced earlier, alongside with the deterministic account, is the key factor in acquiring technical appliances. Interviewees said that different evaluation processes before the actual purchase are acts that have to be performed because "they" are on the other side, and "they" may take your money

and self-dignity if you are not cautious and reflective enough. Put differently, technologies are always given meaning to in relation to something, and one's own social identity is formed in relation to another (whether imagined or real) person.

In addition, this respondent articulated the so-called "psychological pang" (Woodward 2003, 399) which happens when people finally reach their material dream and this dream device loses its charm after a few weeks. As Woodward (*Ibid.*) emphasises, "dreaming and fantasizing are important", and "[t]he psychological pang comes when people acquire elements of their dream, and invariably discover that their lives soon settle back to a mundane reality". In line with Campbell (1987) and McCracken (1988), a large part of consuming happens in imagining and dreaming, which could be claimed as being more important than the actual purchase of the object. The interviewee in question is aware of this psychological pang and the imaginative nature of consumer objects: by this realisation, he has managed to restrain himself from excessive consuming which denotes that he is a responsible consumer after all.

Another way of coping with the label of a "bad consumer" was to ignore the issue and simply refuse to talk about it. In another part of the interview, the same male respondent mentioned that his wife had wanted an expensive food mixer that had been used only twice – it had been lying useless in the cupboard ever since. By referring to his wife's denial in terms of this unnecessary purchase, the interviewee stated that "I'm not allowed to say that we don't use it, so let's pretend that I just say that it is used really much (laughs)." In her interview, his wife did not mention this clearly sensitive subject although I asked whether they had some useless, "deserted" objects in their kitchen. The interviewee only briefly introduced the mixer when showing me all the devices stored in the kitchen cabinet. To conclude, being able to restrict oneself in technology acquisitions is a norm maintaining the purified role of technology. Were one to divert from this standard, it would be better to keep quiet about it or show that one made a mistake and would learn to be wiser in the future.

Controlling Energy and Sustainable Development

Attfield (2000, 58) argues that "demand for sustainable and socially responsible design" in current design of objects is clearly visible among consumers. In the case of technological objects, this is an important issue as "most technological changes are motivated by completely different motives than [sic] environmental considerations – as the business literature illustrates, most product development is meant to increase sales" (Røpke 2001, 416). Similar to these arguments, my interviewees highlighted global conscience and told that technologies should also be controlled in terms of energy and other natural resources. Abeliotis et al. (2011) point out that especially in terms of large white appliances, such as the refrigerator and the washing machine, energy efficiency is a significant criterion when making a new purchase. In their quantitative data, especially women and the respondents with higher education appreciated this feature in domestic appliances. In my data, this discourse was not dependent on gender or age but all of the respondents expressed ethical ideas of a greener, sustainable society. One middle-aged male interviewee, for example, denounced his colleagues for their unsustainable use of technology and answered in detail when I asked what he wanted from future technologies:

Well, durability. Something that would not necessarily be very cheap, but would be manufactured properly and you could fix it, that is, you could get spare parts for it. For example, at my workplace, there was a man who used a chainsaw that was advertised with a fifteen-hour working time. Can you believe it, fifteen hours? Of course, it is a long time if you use it only one hour at a time, but after fifteen hours it is dead, you have to buy a new one. I also know one person who buys all his tools from Hong Kong¹⁸, and when they break he takes them back to the store and gets new ones as replacement because of the guarantee. He said to me that there is no point buying anything expensive because they have this one-year guarantee. The device is going to break in one year, but then you get a new one to replace it. If you think about the whole society and the globe, what if all the Chinese would act like that! There would be a huge pile of broken impact drills or something. People would need some sense with these issues.

The extract shows that domestic appliances are considered objects that have to be perceived within a larger context of society and the world, which may mean that they

¹⁸ Hong Kong is a cheap Finnish supermarket chain selling goods from kitchen utensils to furniture and DIY tools.

are regarded as a significant threat to our well-being and natural resources. Furthermore, these kinds of utterances pointed to people who are less ethical in their actions. To highlight one's own responsible social identity, all of the interviewees seemed to know someone who is not ethically aware in technology-related issues and whom they used for determining their own responsible ways of thinking and acting. Sometimes these non-responsible others were imagined, not real people, and were referred to as "people in general". Interestingly, although I chose the respondents to represent ordinary Finnish people, no one admitted being "ordinary" in this sense. At a first glance, it may seem that all the respondents just happen to be fine examples of conscious consumers, but what this emphasis of others, "people in general", really implies is a strong, normative cultural order from which the respondents do not want to deviate. In other words, the purification of technology and maintaining an ethical self are such a powerful discourse in the Western culture that the interviewees would jeopardise their image as culturally and socially competent people if they diverted from this norm.

Another male interviewee also pondered domestic technologies in terms of ideals, and as in the quote above, he articulated abstract rules that are embedded in using and disposing of technology:

Well, the principle is, because of my values and views of the world in general, that people do not have right to excessively buy things. The ideal would be that domestic appliances would not burn electricity and natural resources both in their manufacture and use. However, there are no such gadgets, I think. The whole trajectory of the device should be sustainable in a way that it would ease my life, but not too much, because you also have to suffer in order to achieve something. But the trajectory of the devices, using and owning them, should not harm other people.

In this account, the right place for a domestic appliance is somewhere between ease ("it would ease my life") and effort ("you also have to suffer "), and these dimensions should be, according to this male respondent, taken into account right from the birth of a device to its disposal. Yet again, mundane technologies are seen through a dichotomy between rational and social. To complement the functionality of the device, the sociality highlights the moderating role of people, from those that design and manufacture things to those that use and finally discard them. The respondent calls his view his own "principle" and talks about suffering that implies that ethicality

of technology is something that a person chooses to do – and has to pursue – even if it may demand extra efforts and some uneasiness. As I will continue to consider in the next section, although domestic technologies are commonly designed to make things easier or offer entertainment, the purification of technology requires human activity. One could even say that the protestant ethic – the norm of working and saving in order to reach salvation – controls our behaviour and meaning-making regarding domestic appliances.

Controlling Time and Activity Demand

Max Weber (1971) writes about the protestant ethic, which refers to ascetics and diligence arising from Puritanism and maintaining Western capitalism. The protestant ethic and the emphasis on work and saving money are clearly visible when the interviewees purify technology. Especially entertainment technology, most obviously the television set, evoked comments on moderating time and replacing the viewing with mentally and physically more challenging and stimulating acts. Once again, technology was regarded as something that has to be controlled and moderated, that is, purified.

First, television viewing and other actions that are entertaining in nature, such as playing computer games, are seen as a threat for the intellectual capabilities of humans. If respondents described their television viewing, they usually mentioned reading or solving crosswords or sudoku alongside the viewing in order to justify it. One of the interviewees, for example, regretted his behaviour after a hard day at work:

When you come home from work, the television set is usually on, and yes, my day ends with watching television. It is a big part of my days. It is a shame that you do not read that much anymore. I read a lot when I was younger. Now I just lie on the couch in the evenings.

Among several others, this interview directly linked technology with reading. The respondent admitted that television viewing had affected his reading habits because watching television is more appealing than reading books when he is tired from work. Accordingly, in these accounts, technology was seen to contradict something very human and valuable: reading.

Reading is another, more familiar and older type of media at home and therefore so often compared with the television and the computer. Virve Peteri (2006) studies this link and argues that novel technologies are domesticated in relation to more familiar things such as printed media. Consequently, the television and the computer are often talked metaphorically as books that are read (see, for example, Internet pages that are read). In her words: "Talking about 'new' and 'old' media creates a discursive space that enables recognition of certain differences and similarities. The new is given meaning in relation to the old and the other way around. Thus, the new includes the old, and the old is defined in relation to the new." (Peteri 2006, 174)¹⁹ This can also be seen in my data. The television has contributed to the fact that reading has become more appreciated, and reading, in turn, has played its part giving television viewing a lower status. As Peteri (2006, 184) concludes, "the print media have established certain criteria to what is considered activating and educating".

The deteriorative effect of the television was also seen in the accounts in which people talked about their favourite programmes. The male interviewees expressed their interest toward documentaries and news while some of the female respondents admitted watching soaps or reality television, which are programmes that are culturally considered inferior to more educational and informative programmes such as the news. Gendered viewing habits are detected by David Morley (1988, see also Gray 1992, 160), who studies television use and viewing behaviour and contends that male respondents were keener to emphasise their sophisticated attitudes toward television programmes than women. According to Morley, this is understandable since women tend to watch television while doing domestic chores, meaning that programmes should be easy to follow. Men, in turn, could dedicate themselves to the viewing because they did not have that much domestic responsibility.

This does not clearly explain my data since men, especially in younger families, also said they took part (at least in some) in domestic duties. Further, several male interviewees reported that they watched a lot of sports which can be associated more with the entertainment genre. Also, Gray (1992, 74-78) criticises Morley's

¹⁹ The translation from Finnish into English by IA.

explanation because her interview data showed that if women really wanted to watch television, they took a break from their domestic work. However, what differed was the sense of guilt. In addition, it was more common among women to try to somehow utilise their spare time. Despite these differences, it still seems that, contrary to men, it is more acceptable for women to express a preference toward fictional, "easy" programmes. These women were not criticised for their television viewing, but instead, the television viewing of several male partners was considered a problem (this is elaborated on in the following chapter concerning couples and domestic technologies).

Unsurprisingly, physical inactivity was also associated with the television and the computer. The interviewees frequently mentioned going out and exercising as an alternative to television viewing, but instead of doing that, most of them admitted staying at home and watching television. To complicate the matter, not only entertainment technologies were seen as posing a problem to physicality, but also basic labour-saving devices were given meanings to in terms of the activity demand. Everybody appreciated the merits, for example, of the washing machine, and most of the interviewees were not ready to give up the devices that facilitated their everyday life. Nevertheless, they said that not all hard work should be mitigated as technologies deteriorate the human body; total easiness in the domestic environment would lead to illnesses and degeneration. As one middle-aged male interviewee thought:

I do not understand why everything has to be so ergonomic nowadays. They put stoves and everything at this level where you do not have to move physically at all. And at the same time people go and exercise in those centres, jump there in the classes, but they don't move physically in their everyday life. Why are the devices not placed at different levels? People become stiff if they do not have to do anything. I think it is very alarming if a person cannot, for example, take a baking sheet from the oven because it is too low.

The controversy between facilitating and activity is interesting because it can also be seen as an example of the process of purification. People want labour-saving devices because they appreciate their free time at home, but total acceptance of these objects would mean they give up control to technical appliances, which is not a socially acceptable option. As we have seen in the previous examples of controlling technology, keeping the final control to oneself is to be able to prove that "devices

"are just devices" and they can be kept in their right place – the place that is separated from humans.

However, the elderly and the disabled were seen as the exception in this rule, and were explicitly allowed to enjoy assistive and labour-saving technology. In Finland, new automatic innovations for the home are usually introduced as applications for the elderly or/and the disabled²⁰. All of the people I interviewed were familiar with such new technical possibilities either through media, or as in the excerpt below, through work:

I have seen automatic curtains at my work, and I think they are an utter vanity. It is only good that people have to move and draw their curtains. Well, of course, those could be useful for the elderly. (...) There are also these appliances aimed for the disabled, for example ascending kitchen cupboards. Those are great innovations, I think.

Interestingly, although the common opinion was to grant all the possible devices to the elderly and the disabled, all of the interviewees, including the oldest ones, wanted to separate themselves from that group of people. It seems to me that the activity demand and the idea of the protestant ethic combined with the purification of technology are so strongly rooted in our minds that letting them go is not easy. Arguably, accepting the need for assistive technology means that a person simultaneously gives up the purification process and allows technology to become a part of her/him. As mentioned earlier, hybridisation, that is, mixing social and nature, human and technology, is something that a modern person resists; the interviewees' accounts seem to indicate the same resistance in terms of assistive technologies.

This question relates to agency. If a person lets technology pursue things that are normally considered human, she/he is in danger of assigning a part of her/his

²⁰ This differs from Anglo-American countries where automatic domestic innovations belong more to the fields of entertainment or security. The emphasis on the smart domestic innovations of well-being may be derived from the national context of an affluent society. Another, more pessimistic view is that this is the marketers' way of promoting such technology because entertainment technologies are not that easily approved of (Peteri 2010).

individual agency to the machine. As Latour (1987) argues, technologies and other material objects have an agency of their own in a network consisting of humans and objects, but this is hard to accept in a world in which the social and the technological are seen dichotomically, and the role of technology is considered a servant to the human master.

4.3 Technology is Where the Home Is?

In addition to different discourses of controlling, the purification of technology could be observed in the accounts that elaborate the essence of home and the relationship between domestic technology and home. In chapter 2, I introduced the notion of home and argued that it is embodied more in social relationships than in a stable, visible construct such as a house or an apartment. This ideal nature of home was also visible in my interview data as all of the interviewees shared the view that the most important thing in creating the home is having happy social relationships. To continue, technical appliances were always given the secondary role in the home. The basis of home was also regarded as radically different from technology: whereas home is a warm, personal haven, technology is something cold and impersonal. Purified technology is, as I have showed, strictly rational and functional, but home is something that is superior to this materiality and rationality. However, in some rare and cautiously reported cases, some devices may actually have a constructive role in the formation of home and may sustain the feeling of domesticity.

Purification of Domestic Appliances in Terms of Home

The purification of technology with regard to the home is a mental as well as practical project. The mental aspect was seen in the normative accounts in which the interviewees separated technology from the home at an abstract level. As one of the youngest interviewees stated: "If people do not feel well and do not get on with each other, it does not matter how magnificent a house or gadgets you own. They do not make the home." Practicality, in turn, could be seen in locating and organising the objects in the home, and one of the most popular ways to purify technology was to separate it from the spaces and objects that were considered embodying the essence of home. As Alexander (2003, 188) argues about technology, the computer in his

case: "Objects are isolated because they are thought to possess mysterious power." For example, a middle-aged female interviewee depicted how she prefers a bedroom that is completely free of technological devices:

We had two televisions earlier and one of them was located in the bedroom, but nowadays I do not want any technical devices in my bedroom. No television or anything, not even a computer desk. I do not know, this might be some kind of Feng-Shui thinking (laughs) although I do not think like that otherwise. Anyway, I believe that there should not be too much electricity and devices that demand attention in the home.

This interviewee drew a clear line between home and technology and argued that technologies do not fit the home environment because they "demand attention". One male interviewee gave the same kind of argument by defining home by its difference from a hotel:

A: I do not want to have all the latest devices. If there are too many, I will feel that I am in a hotel.

Q: That's interesting, you say that it is like being in a hotel?

A: Yes, if the home looks very technical and devices are too visible there, then it will feel like a hotel. For example, if you have a projector on a ceiling and amplifiers everywhere, that will take the feeling of home away. If you could hide them somehow. For example, I'd like to embed my computer into that wall. It would enhance the feel of home, make it look more comfortable.

By contrasting the home with a hotel room, the interviewee emphasised the speciality of home and managed to highlight that technologies did not really belong to it. The presence of technology, and sometimes just a feeling of the presence, was commonly referred to as spoiling the sentiment of home. The existence of technical devices was obviously seen at a visible level as they were located at home, but also hearing them was a feature that irritated many of the interviewees. They frequently despised the noise of the vacuum cleaner, for example, and associated the ringing of the mobile phone, in particular, with the world outside home, usually work.

Modern technologies permeate our homes in many ways, which is seen as threatening the essence of the home environment. Being able to control the home, in other words, decide how to decorate it and who is permitted to enter it, is one of the most important dimensions of the home, but technologies are seen to break this

control. Baudrillard (1996, 200) calls the modern home owner "a symbolic technician": someone who "dominates, controls and orders objects" (Woodward 2007, 75). It almost seems that technology and electricity can contaminate the home environment, and restricting their presence and use are essential in order to sustain the ideal home. Homes are actively constructed by decoration and objects that embody positive feelings (see Csikszentmihalyi & Rochberg-Halton 1981), but technical artefacts are rarely regarded as decorative objects that add something to the home. Quite the opposite, they are considered artificial, uninvited strangers that have to be located and controlled in such a way that they do not pose a threat to the authentic order of the home.

The extract above also directs attention to the decorative dimension of technical appliances. Miller (2008) writes about "the comfort of things" and refers to the order and objects in people's homes. Creating the order of things is an aesthetic process²¹, according to Miller, and aesthetics mediate comfort and sense of having an agency. This could also be read in my data as aesthetic ordering of the home was a task that almost every interviewee reported enjoying. However, technologies posed a problem to this otherwise enjoyable act. According to the interviewees, technical devices are big and ugly and therefore hard to locate in the home. For example, the television set was depicted as "a monolith that is bigger than its size" or simply "ugly as hell" (see also Woodward 2006, 272). Many of the respondents dreamt about structures that would hide technical devices, which usually proved either too expensive or otherwise impractical so that the right kind of order of objects had to be invented in other ways.

One way to maintain the feeling of home was to have separate "gadget rooms", such as a utility room. Especially the washing machine (and the possible tumble dryer) was an object that had to be located out of sight and its "right" place was unanimously the utility room. If there were no such room, the second best choice would be the bathroom. This normative location of the washing machine is also detected by Laermans & Meuldres (1999, see also Shove & Southerton 2000), who

²¹ See also Leddy (2004, 9), who points out that words "right", "ordered", and "clean" are often used when talking (or writing) about aesthetic things.

study the domestication of laundering. The researchers contend that whereas traditionally laundering was industrialised and performed in the public areas, modern home laundry has to some extent become domesticated, but "it has never really been integrated into the domestic space": "Everything concerning laundering – from washers and dryers to irons and laundry baskets – is hidden in peripheral areas in the home and was never assigned a place of its own." (Laermans & Meulders 1999, 129) According to my interviewees, the washing machine continues to be situated in a periphery in the home, but in my case it has been assigned a place of its own: the utility room²². This was also the reason why the washing machine was usually forgiven for its rough appearance. As long as other people do not see it, and it accomplishes the task that it is designed for, the device is allowed to look ugly.

In my interview data, entertainment technologies were the most cumbersome ones to be placed. As we shall see in the next chapter, the ideal location for the television set and the stereo system is at the home theatre, somewhere out of sight. Home theatre was, however, an ideal situation since not everyone had a spare room to designate to entertainment technologies only, which meant that the television and other entertainment devices were usually unsatisfactorily located in the living room. The problematic nature of these devices usually stemmed from the fact that there were so many of them to be situated, including the television, digibox, DVD player and speakers; in the end, there seemed to be "piles of ugly, black, angulated boxes" and "tons of electric cables coiling on the floor". Yet again, the interviewees said that technology should not be at the centre of the home and it should not attract attention.

The design factor of entertainment technologies was, thus, an issue that was discussed by almost every respondent, who wished that there would be more choice available in their appearance. To balance the association of technology with cold and rational, people preferred gadgets that are "soft", "round-cornered", "small", and "colourful". In addition, the words "clean" and "neat" imply that technology and electricity as such are correlated to dirtiness. This is a good illustration of Mary Douglas's (2002) analysis of purity and danger. She argues that it is in human nature

²² Huokuna (2006, 152) writes that utility rooms became common in the 1970s in Finland because kitchens in Finnish apartments are quite small and the washing machine cannot be comfortably fitted in them.

to make sense of the chaotic world by ordering and categorising things, and the achieved (artificial, human-made) order is sustained by classifying anomalies as "dirty" or "taboo". Entertainment technologies are dirty because they do not fit in the cultural order of the home. They represent something that may pollute the home, and this is the reason why people perform purifying acts and try to put the devices in their "right" places.

The big size of a technical object was not always the problem. Large kitchen appliances seemed to be the most unproblematic to place since they had a specific room: the kitchen. Basic kitchen appliances, such as the refrigerator, the stove, and the dishwasher, were so fluently domesticated that the interviewees usually forgot their existence. In accordance, the normal phrases regarding these devices were that "they are where they are supposed to be" or "they just are". Such a self-evident nature of these appliances may be due to Finnish standard kitchens where they are usually the so-called basic devices. Small kitchen appliances, in turn, were seen as more challenging as they require space at counters or cupboards. Given the usual lack of such spaces, the interviewees commonly carefully considered which devices they really needed and could afford to situate. As one of the female interviewees told me: "If counter space is used for storing devices in the kitchen, then it will have to be thoroughly justified."

Contrary to entertainment technologies that are culturally and socially considered threatening and deteriorative, the acceptance of kitchen devices may also stem from their overall association with food. Family meal is highly valued in Western cultures, seeming to embody all such ideals as that the home consists of: being together, interacting and sharing. For example, Johanna Mäkelä (2001; see also the next analytical chapter for the analysis of food when forming a relationship) studies food and emphasises social relationships by arguing that the family meal is the most important form of eating because it does not only nourish the body but integrates and sustains the family. Further, some studies note that people value the kitchen table as an important object in the home as it symbolises the integrity of the family and/or friends (Soronen & Sotamaa 2005, Petridou 2001). Given the food's link to social relationships, it is not a surprise that food-related technologies are not as stigmatised as entertainment technologies that are often reported causing dissonance in the family.

Another technical object that was considered hard to locate in the home was the computer. Overall, the computer was associated with work, and its presence was said to refer to the stress the interviewees attempted to keep outside the home. As one of the female respondents said: "If I acquired a laptop, I think I would start to pursue work projects at home, and that is something I do not want to do. I want to draw a clear line and keep work at the workplace where it belongs." This statement is a good example of expressing the right cultural order of things and people. Work and working, things that are related to the computer, belong to the workplace, and the home is an environment constructed to serve as an opposite to work. If an interviewee had the computer in the home, then its right place would be in a separate room or space, yet again hidden. The best option, according to the respondents, was to have a study where the computer was used sort of outside the home, in a place specifically designated to work and isolated from the rest of the home with a door or walls. Virve Peteri (2006, 354; see also Ward 2006, 153) also points this out and maintains that the problematic nature of the home computer stems from its relation to work. The computer can be compared to the sewing machine in the late nineteenth century because sewing machines were then industry-related objects that were not considered suitable for home (Forty 1989, 94-97).

In a rare occasion, technology was reported as having a direct role in the construction of home, but these accounts were quite warily told as they oppose the cultural norm of the purification of technology. It seems to me that a culturally and socially acceptable answer to the relationship between technology and home was critical in nature, or at least very carefully considered. As I have illustrated, the purification of technology means that its role is rationalised and functionalised, and it is considered "just a device" that can be mastered and moderated by humans. When I asked the interviewees what role technology plays in their home and whether technology is part of constructing the home, their unanimous, quick answer was that basic technologies, such as the washing machine, are a "must" since they ease the chores and give you more free time. Otherwise the technologies "just are". Furthermore, entertainment technologies were mentioned as offering occasional leisure and fun, but since things are not allowed to be just fun and easy and their use also affects other family members, their use should be carefully moderated and controlled.

Nevertheless, when the interviews progressed and our chat (usually) deepened, the interviewees started to remember and explain also other, less obvious or culturally acceptable, experiences with technologies. For example, a male interviewee revealed how the television, a commonly stigmatised entertainment device, may actually contribute to the feeling of home:

I believe that many men share this view that when you move to a new house, you first take a look at where you will place the television set and then plug it in. When the television and stereo system work, the house starts to feel like home. After that you may think about where to put clothes and everything else (laughs).

Once again, the laughter implies that the statement is something unusual, and it is meant, for example, as ironical. Or, as in this case, the interviewee is aware that his account does not follow the cultural norm of the purification of technology, and he acknowledges its unusual status in order to maintain his role as a culturally and socially competent interviewee. By referring to "many men" and implying that he is not the only one thinking in such manner, the interviewee justifies his experience and creates and sustains a gendered meaning of domestic appliances.

One elderly interviewee offers another interesting account concerning technology and the essence of home by pointing out the difference between an institution and home. In the quote below, I have asked whether technologies have a role in constructing the home:

Yes, you need everything in that. If there were no technical devices, what kind of home would that be? You could not prepare food or anything. It would be some kind of institution if everything was ready-made and just brought to you.

This statement is understandable given the centrality of food in creating and maintaining the home. Cooking and food-related technologies are, according to this interviewee, an essential part of the home, and if you cannot cook yourself, you are not at home but in an institution. With this account, the respondent refers to activity and agency that some technical devices may offer. To feel capable and have an agency were important to all of the interviewees in technology-related issues, but the importance grew among the elderly who had clearly been thinking about their ability to live independently in their own home. Although all of them reported that they did not need assistive technologies, they nevertheless explicitly acknowledged the

possibility that shortly they might have to change their minds. Being able to prepare one's own meals indicates that one can live independently. When this is no longer possible, the home might have to be changed into an institution; a place that cannot be called home since everything there is "ready-made" and "just brought to you".

To conclude the relationship between home and technology, the most striking thing about the data is the normative, ideal and contradictory nature of this relation: technology is not important but home is; technology is cold, but home is warm; technology is purely rational and functional, but home is crystallised in happy, social relationships. However, some positive and enabling functions of technology at home were found, but the respondents mentioned them only briefly and warily.

4.4 Chapter Summary

In this chapter, I have addressed the purification of technology and illustrated that purification is a culturally and socially preferable attitude toward domestic appliances. However, some exceptions were also found: the interviewees expressed views that associate technology with the social realm, which is considered at odds with technology.

Analytically, the purification manifested itself in the form of "just-talk". The word "just" directed me to several places in the interviews where the strict purification and the stance of "devices are just devices" were expressed. "Just" was also associated with technological dominance, and to illustrate how powerful and overwhelming a phenomenon the interviewees considered technology to be, I demonstrated how technical objects and technological change were discussed in a deterministic manner. Further, the interviewees felt defenceless when they were forced to adapt to the technical evolution and change. For example, technology was described as faceless. In other words, the respondents said that technology just comes and affects us, and we do not know exactly where it comes from, how to oppose it, and what its consequences are. In some interviews, the engineers were blamed for the technical development and described as distinct from "normal" people because they do not know how people actually live and how their innovations are used. Technological

dominance is directly linked to purification: If there were no technological threats and dominance, there would be no need for purification.

To think technology is a threat is not uncommon as one of the main discourses media conveys is technological dystopia. We have all read, for example, columns about technologies that overstep the "natural" boundaries of the world, most apparently the public debate on gene technology. To complicate the matter, these dystopias are often combined with utopias that embrace the potential of the same technology that is feared of at some other places. As Suominen (2003, 228) sums up the cultural and historical change of ICT, it can be examined through the tension between the controlled utopia and the fear of uncontrollability (see also Mackay 1997, 263). Pantzar (2000, 18) has even argued that in order to succeed within a larger group of users, technical innovations need a public stir – maybe even like the one above.

Fisher & Wright (2001) explain these extreme responses to technology, Internet in their case, with William Ogburn's (1964) theory of cultural lag: "The lag suggests that the effects of a technology will not be apparent to social actors for some time after it is introduced to society." (Fisher & Wright 2001, 2) In my view, this is not a sufficient way to elucidate these contradictory views on technology for the explanation itself leans on determinism. It is assumed that technology is eventually accepted and people will adjust to new technologies. As my data shows, even old and so-called domesticated technologies presume active controlling – that is, purification – in order to be ideologically and practically kept in their place in the home.

Technological dominance was confronted with controlling acts – both mental and practical – whereby the interviewees tried to purify and control technological predominance. Purifying technology includes means that the interviewees used to illustrate that "technical devices are just devices", and they have to be managed and controlled on a daily basis with different mental and practical means. Purifying is a process that separates technology from people, nature from society, and emphasises the distinction between the cold, inhuman technology and warm human values. Different controlling discourses were part of this procedure of purification, which

the respondents used to define the right place for technology in the domestic cultural order of objects and people.

The first type of control was control in terms of money and technical features. According to interviews, technologies have to be rationally acquired in such a way that people are aware of their own personal needs and the qualities of the device they are going to purchase. A pricey device was associated with more technical features; moreover, if the properties of the device were not all used, the money spent would be wasted. Some of the interviewees, however, admitted having been irresponsible with their purchases, but usually revealed this with irony highlighting their familiarity with the social and cultural norms and their "deviant" behaviour.

The second type contained control at the global level. Although domestic technologies are purchased for and used in private realms, they still affect the whole world and pose a serious threat to humanity. This discourse is related to the previous one of money and technical features as many of the respondents stated that buying irresponsibly pricey technology is not acceptable since at some point it has to be disposed of, too. In this case, it was common to refer to other people who did not understand this moral side of technology. Such talk could be understood as a rhetorical means to justify one's own view of the world and one's social role of "a responsible consumer". Extending the issue of domestic technology to the global level is a strong method of emphasising its importance. Technologies and technology-related consequences affect not only me and you, but all the people in the world.

Third, the interviewees talked about controlling time when using domestic appliances. This type was used to define the right and wrong use of devices, whether they were basic labour-saving gadgets or entertainment technologies. It is obvious that entertainment devices, especially the television set, evoked critical and normative comments from the interviewees. Watching television was seen as deteriorating physical and mental abilities, and the overall opinion seemed to be that reading, brain exercising, and going out were preferable to watching television (see also Pantzar 2000, 220). However, the use of labour-saving devices also had to be controlled: appliances should not be used for every task at home but people should maintain their own agency in terms of technology.

These types of control are similar to the findings of Huttunen & Autio (2010, see also Wilska 2002), who analyse “Finnish consumer ethoses and the moral rules that they include”. The first ethos contains “agrarianism”, meaning that “a virtuous consumer is economical concerning both money and material – saving and self-sufficiency are the central moralities” (Huttunen & Autio 2010, 146). Agrarianism is detectable also in my data in the controlling accounts of money and technical features. In their research, Huttunen & Autio (*Ibid.*, 146) also find that “economism” emerged alongside agrarianism, and this “rationality of a consumer” is directly linked to the first moderation type of this study. Economism is an extension of agrarianism and connects with the historical era when the Finns had economic resources and mass production was blooming but the consumers were still expected to control their consuming. Third, Huttunen & Autio (*Ibid.*, 146) write about “green consumerism”. The main idea of this consumer ethic is “to live a modest life in an environmentally sustainable way, committing to communal rather than to egoistic values”. Obviously, that was visible in my data as the respondents highlighted the sustainable development both in the manufacture and use of technical gadgets.

The respondents’ control discourses echo how technologies and technological change are criticised in classic sociological, economic and philosophical studies. For instance, Marx (1990) writes about the materialist understanding of history and describes the capitalist world order by analysing the means of production and social relations between the working class and the property owners. Machinery is at the core of his analysis, and this automation of work is said to alienate workers from their selves and deteriorate societies and people both at the mental and physical levels. Further, Marcuse (1998; see also Ellul 1965 for similar thinking about technology and society) examines “technological rationality” as the advanced capitalism and the tendency of machines to suppress people and individuality. However, whereas Marx focuses solely on the institutional side of the society, Marcuse (1991) extends his thoughts to everyday life. Dant (2005, 46-47) encapsulates Marcuse’s (1991, 147) idea by writing that:

Marcuse calls the ‘introversion’ of technological rationality into embodied practice that affects everyday life relationships with material objects, shifting individuals’ sensibility away from their emotional and mental lives toward what he calls the ‘objective order of things.’

Despite the age and shifting focus of these examples, similar critique can also currently be seen in the media, and therefore in the data of this research.

Pantz (2000, 252) states that the Finns have “a peculiarly positive attitude toward new technology”. Further, he continues that compared to the other European countries, the relationship between the Finns and technology could be portrayed with the words “open” and “indifferent” (*Ibid.*). My data tells a different story, which is why I have to disagree with Pantz. All of the interviewees managed to point out their wary attitude toward future domestic technology and technology in general. Purification and its divergent types of control exemplify how much effort ordinary people spend in managing this complex world of technical appliances. When one talks to people, they are not indifferent, but express a range of analytical and practical views on technical issues and gadgets.

In addition, the types of control could signify reaching the final stage in the consumption of domestic appliances. Pantz (1996, 70-71) writes that the first phase of innovation in the markets is “consumption as an end in itself”²³ in which the experience with the gadget is important in itself. The second phase in the course of innovation is “instrumental consumption”²⁴. This means that users start to appoint demands for the new gadget. For example, at this phase, it is no longer unimportant if a television works properly or not. The final phase is “critical consumption”²⁵. Pantz (*Ibid.*) writes that this could be seen as ”a period of critical consuming” in which users start to realise the shifts at a global level and understand their dependency on material goods. Related to the types of control, this third stage sounds familiar. The respondents managed to point out their critical and contemplative relationship with domestic technical devices, and the types of control could be seen to exemplify this three-phased course of innovations.

The types of control could also be seen to crystallise in the notions of need and desire as all of them address the balancing between impulses and necessities. There seems to be a strict moral imperative that conducts the opinions and meaning-making processes in terms of domestic appliances. Turo-Kimmo Lehtonen (1998,

²³ “*Ilsetarkoituksellisen kulutuksen vaihe*” in Finnish. Translated from Finnish into English by IA.

²⁴ “*Välinearvoisen kulutuksen vaihe*” in Finnish. Translated from Finnish into English by IA

²⁵ “*Kyseenalaistavan kulutuksen vaihe*” in Finnish. Translated from Finnish into English by IA.

221-222) writes that there are three kinds of talk about the need in consumption. The first is a necessity that is used for referring to objects that one simply cannot live without. In terms of technologies, this kind of necessity was frequently illustrated with large white devices, such as the refrigerator and the washing machine. The second way to talk about the need, according to Lehtonen, is to think about whether one will use the object. In other words, one contemplates whether the object will settle as part of one's everyday practices. The computer was one of the technologies that were interpreted through the imagined use, but basic appliances were also part of this cluster as people were advised to think whether they would use all the features that pricey appliances in particular are said to contain. Third, the need is talked through desire that is not connected with a certain object: if one desire is fulfilled and an object acquired, the desire will not go away but another object will start to hunt one. That was clearly the case with novel technical applications. They were not a real necessity, but especially the male interviewees continued to desire them.

Lehtonen further argues that self-discipline is widely assumed to be a core in consuming, and consumers constantly balance between ascetics and desire. In addition, the positive self-image of a person is connected with restraining her/himself from consuming or managing to save money (Lehtonen 1998, 224, 229-231, see also Sarantola-Weiss 2003, 37-39). Generally speaking, materialism is "regarded as a negative value system as it involves placing possessions and their acquisition at the centre of life with a belief that acquiring more possessions leads to happiness" (Podoshen & Andrzejewski 2012). Sarantola-Weiss (2003, 71) traces this stance to the nineteenth century and writes that this kind of balancing between the "real" and "artificial" need is typically a European point of view on consuming, and its roots are in the bourgeois class which worried about the working class spending their scarce money on vanities. Active balancing and self-regulation were likewise visible in my data: while talking about technologies, the interviewees simultaneously talked about themselves as consumers and about other people who were considered less ethical users and buyers of technology. Wilska (2002, 199) argues that comparing oneself with other consumers is one sort of coping strategy in a rapidly changing material culture and a marker of "cognitive resistance: distancing oneself consciously from 'heavy spenders'".

The types of control are part of the ideological purification of technology, but they also illustrate that technologies are consumer products, and acquiring them revolves around regulating the self and obtaining positive social identity according to more generally unquestionable attributes, such as preserving nature and understanding the fetishist nature of many commercial objects. This relates to Pantzar's (2000, 84-115) argument about how the computer was rationalised to the households in its early days. He concludes that the computer was justified in the media by referring to it as "just a tool", and the reason for this he finds in the deep-rooted opposites of production and consumption. Production is "a positive force and consumption is negative. Active production of the new happens in production, whereas consumption means passive receiving and destruction of values" (*Ibid.* 133). My interpretation is that this "just-talk" of the computer means purification, as the computer is apprehended as a consumer product: a tool that is controlled by the user and used in certain ways echoing the values of the user.

One mode of restraining oneself from acquiring excess technologies happened through reading technology magazines (*Tekniikan Maailma*) or browsing product catalogues or advertisements, which seemed a particular interest of the male interviewees. As Campbell (1987, 91-92, see also Jenkins et al. 2011, Belk et al. 2003) notes, viewing a picture or reading a text is a mode of consuming because it is a process in which the product is made meaningful to oneself. This kind of imaginary consuming was preferred by the interviewees, and following Lehtonen, it could be said to emphasise the positive image of the interviewee as the consuming does not materialise in practice. However, there were cases wherein this thin line of morality was crossed and the interviewee admitted making spontaneous and irresponsible purchases.

As in Lehtonen's data, my respondents also dotted their confessions with laughter. Crossing this border was immoral and therefore tempting; if respondents gave an account of such slipping, they usually continued with an account of remorse. The respondents who admitted purchasing unnecessary gadgets seemed to realise that their "need" for the new technology was an urge that had no end. As Baudrillard (1996) argues, new objects never really satisfy the psychological "need", as once acquired, they seem to "disappear" and never satisfy the "need" in the first place. In the words of Woodward (2011, 372; 382):

Purchase simply eventually leads to further lack and disappointment, and the cycle of longing and desire begins again. (...) ultimately objects point beyond themselves, to another lack. The result is a continuous sequence of absences, unfolding structures that desire further objectual engagements: objects creating the need for further objects.

This is also linked to emotions of boredom and excitement and explains why consumption may be compulsive. Illouz (2009, 390) states that “if the excitement attached to the consumption of novel goods is doomed to end in boredom then only the purchase of novel goods can alleviate disappointment and boredom”.

Finally, in this chapter, I contemplated the relationship between domestic appliances and home, which were concepts the interviewees commonly regarded as opposites. Separating home and technology both at a mental and practical level is part of the purification: the interviewees thought home belonged to the human side of the world and actively attempted to keep technology in nature. I showed how the interviewees wished to keep one part of their home non-technological with no electrical devices and artificial stimulus. There were attempts at controlling technical objects through different location decisions, preferably hiding them – or at least finding them a place where they would be noticed as little as possible.

Once again, the stigmatised television set posed the biggest problem, and the interviewees stated how they despise this big, ugly entertainment-related device. On the other hand, kitchen devices, which are associated with food and being together, were more easily accepted in the home and caused no problems with their big and angular appearance. Basic kitchen appliances and the washing machine were not seen as "nomads" in the household, and consequently, they had designated places of their own: the kitchen and the utility room, respectively. In addition to the television set, the computer posed a problem in its locating as it was strongly associated with work and the official sphere of life; with things that the interviewees wanted to separate from their home. Hurdley (2006, 725) argues that “the cultural norm is to display things in the home for moral reasons”. Her underlying claim is that morality (in British domestic culture) is embodied in family, and sometimes even non-aesthetic objects are displayed in the homes because they represent family values and intimate social relationships. This may explain the difficulties in locating technological objects at home. Technical devices seldom convey family values, or at least not so directly.

However, elsewhere in their interviews, some respondents described how a domestic appliance might have some kind of role in constructing home. These accounts were, nevertheless, in a minority because the norm was the purification of technology. Nostalgic technical objects, such as a reel-to-reel tape recorder and design artefacts, succeeded in transcending the norm of purification, since some of the respondents told how these gadgets could enhance the feeling of home and not obstruct it as the more recent technical innovations did.

To clarify the point, Table 3 illustrates the purification types of domestic appliances presented by the interviewees and used for confronting technological dominance.

Table 3. Types of Purification

Type of purification	Description	Aim of the type
Clear purification	Talking about “just technology” at the abstract and general level.	Distinguish technology from social and cultural elements of life.
Controlling money	Restraining from spending too much. Buying technology that is enough for the individual need.	Save money and further use.
Controlling energy	Buying devices that are ecological. Preferring recycling.	Promote sustainable development.
Controlling time	Not spending too much time with entertainment appliances. Avoiding un-necessary use of labour-saving appliances.	Diminish physical and mental deterioration.
Controlling the home	Locating the devices so that they are not “too visible” in the home. Matching the devices with the overall decoration of the home.	Sustain the ideal home. Maintain familial relationships.

It is nevertheless important to notice that purification is a process par excellence which never seems to "be ready" as it is a general idea behind the meaning-making of domestic technologies. Although some domestic device appears to be appropriated as a part of the home and everyday practices, it is still purified because people need the process of purification to feel superior to technology. Further, everyday life and routines are in a constant revision. One minor change at work, for instance, may alter the home life in a way that the meaning-making and practices with domestic devices change in accordance. Above all, I argue that purification is especially needed and used when life is in a minor or major turmoil. In other words, purification in everyday life goes rather unnoticed when practices flow effortlessly, but when something goes wrong or changes, purification is used to retain the agency in one's life.

4.5 Discussion

There are three sociological theories that are closely related to my analysis of the purification of technology: The monster theory, technology as a discourse, and theories of domestication.

First, the monster theory is an idea of Martijntje Smits (2006), who argues that "[c]entral to public discomfort about new technologies is the notion that they are unnatural" (*Ibid.*, 489). Following Mary Douglas's (2002) analysis of dirt and taboo, new technologies are considered anomalous in a symbolical order of things and people. A monster (see, for example, Mary Shelley's story, *Frankenstein*) is a metaphor for new technologies, especially for those that are associated with dystopian consequences. The ambivalence of an anomaly, that is, new technology, induces fear, as it cannot be neatly put into clear-cut categories. This resembles my argument of purification and the centrality of categories. Technology is a threat since it does not belong to nature or the social, and it seems to have powers that no human can resist (determinism). However, the monster theory cannot explain why people tend to view also older, seemingly successfully domesticated technologies negatively.

Smits (2006, 500-501) contends that there are four styles of "monster treatment" that are used to tame the monsters: exorcism, adaptation, embracing, and assimilation.

Exorcism attempts to expel the monsters while adaptation transforms them so that they fit the cultural categories. Embracing means that utopias and new technologies are placed on a pedestal, and the final treatment, assimilation, suggests that both monsters and cultural categories are adapted in order to tame new technologies. Smits's pragmatism is directed at technology policy, and it is especially the new, radical technologies, such as cloning and GM food, that she refers to as monsters. Purification is a notion that can be used to elucidate both new technologies and more familiar ones since it is not bound to a novelty aspect. Purification is a process that is always present when giving meanings to technical appliances, no matter what their age is.

Second, another view that can be extended to cover both new and old technologies is offered by Alexander (2003, 179-192). He writes about cultural sociology and technology as a discourse and contends that technologies are never just rational because they are always part of the cultural order. Following structuralist thinking, he claims that there are grand narratives and collective meanings in modern (or postmodern) societies that constrain, and at the same time enable, our ways of thinking and acting. Usually, these meanings are based on "binaries of symbolic codes" (*Ibid.*, 5), and technologies are often given meaning to in the opposite of good-bad (see also Mick & Fournier 1998 for the paradoxes and binaries of technology and Pantzar 2000, 242 for the tensions people experience in terms of new technical gadgets). As we have seen in the data and analysis of this chapter, technologies are simultaneously good and bad, and rhetoric and justifications for their good and bad qualities and consequences are echoed in the media. Alexander (2003) describes how the computer has been given meanings to through the notions of sacred and profane, and how both utopian and anti-utopian themes still remain prominent when talking about computers. However, although Alexander successfully shows how computers have been given meanings to with the help of this grand narrative of binaries, he does not address the ways people try to balance this contradiction. My argument is that purification (including the discourses of controlling) is a means to diminish the bad and unwanted qualities of technologies, and with purification, these technical appliances are rendered less evil and harmful.

Third, and maybe the most popular and widely known academic concept that could be compared with purification is the notion of domestication. In their article about

the moral economy of the household, Silverstone et al. (1992) claim that the process of domestication contains four phases. The first is an appropriation, meaning that in order for an artefact to become an authentic object in the home, it has to be owned and given significance to. In the second phase, the object is objectified. This means that it is displayed physically and spatially in an aesthetic home environment. After this, the artefact will be incorporated into the use and should find its place in the routine activities of everyday life. The final phase is a conversion wherein the object is given its meaning in relation to the outside world of the home. Put differently, the object starts to reflect and symbolise household values and mediate the status and identity of the inhabitants.

To begin with, the definition of domestication describes a process in which new information and communication technology (ICT) becomes part of the household, that is, it is successfully domesticated. However, this definition is only ideological, and the notion of domestication has been remodelled and widened after Silverstone et al. (1992). For example, in their more recent and concise definition, Berker et al. (2006, 1), argue that domestication is used to "describe and analyse processes of (media) technology's acceptance, rejection and use". Accordingly, domestication may also be used to analyse technologies that are not domesticated, and the term emphasises the complexity of the process by taking into account that domestication is seldom complete. Further, changes in household structure and life situations may induce so-called re-domestication and de-domestication (*Ibid.*, 3). In spite of its etymology, domestication does not necessarily mean studying domestic environments, and after Silverstone's domestication model that was used to research households, domestication has also been used for describing public realms wherein technology is introduced and used (see, for example, Hynes & Rommes 2006, Pierson 2006).

The process of purification has similarities and dissimilarities with domestication. First, as domestication, purification involves spatial ordering and locating of things, which have to be pursued within the existing order of the home (the objectification and moral economy of the household, respectively). Second, both purification and domestication are concepts stressing human agency, and they direct attention to the processes how people make and mould technical objects to suit their homes, practices and purposes. Domestic appliances, for example, are not only objects that

come to affect our lives, but their meaning and use are arranged to fit the homes and their occupants. Further, purification denotes that technical devices are ordered and categorised at an abstract level to fit the ideal home (appropriation). In practice, this is an intangible chain of thinking in which home, technology, society, and humans are put in their right places in the cultural and social order. Hence, home and technology, humans and technology, society and technology, are normatively kept separate despite the fact that reality and everyday routines are not that black and white, and these "contradictory" concepts mix with one another in thought and in practice.

Despite the indisputable merits of the concept of domestication, it clashes at some points with the idea of purification, and this is clearest in the extent of domestication. Domestication seems to imply that successful and most popular objects are thoroughly domesticated, that is, completely incorporated into the home. In Finland, the term domestication is often translated as "taming"²⁶ (for example Pantzar 1996). This can be interpreted as portraying how people confront wild technology: it has to be transformed to suit their purposes so that it no longer poses a threat. Read this way, it is also assumed that technology can be a successful and invisible part of the everyday, as long as users take actions to tame it.

When the meaning-making process of domestic technologies is approached from the perspective of purification, it is obvious that many of the basic technical objects actively used in our everyday lives are not domesticated, nor is there any need to domesticate them. The purification of technology supposes that technology is something distinct from humanity – and it also has to remain so. As I have showed, people actively manifest and try to control this separation. To maintain a positive social identity in terms of domestic appliances requires that purification is expressed at least at some level. In other words, technical objects do not have to be domesticated into the home, but they have to be purified: they are ordered, located, used, and given meanings to in terms of the distinction between technology-human (and technology-home). Finding the "right" place for an object does not necessarily

²⁶ "Kesyttää" in Finnish. Alongside "taming", Pantzar (1996) also uses the term "take root" ("juurtua" in Finnish).

require incorporating it into an aesthetic, practical, and mental order of the home. Rather, it requires ordering domestic appliances in such a way that the inhabitant(s) is (are) able to experience agency, and the device continues to be regarded as "just a device".

Ilmari Vesterinen (2001) writes about an "object game" that refers to the ways people purchase, locate and give meanings to domestic objects. Although Vesterinen analyses objects in general, the object game metaphor could be adapted to domestic appliances. All the technical devices in the home are part of the game, and the goal is to locate them, use them, and give meanings to them in such a way that the dichotomy between technology-human and technology-home is not too mixed, and that the existing aesthetic and normative order of the home remains as invulnerable as possible. Overall, the name of the game is the purification of technology. Moores (1996, 48) argues that making and adapting different boundaries and dichotomies in the home are actually an effort to maintain the ideal home. Consequently, being at home and feeling cosy are not inherent and objective experiences, but they have to be made and actively sustained by emphasising the classifications that are considered natural in the culture. With the purification of technology, the interviewees managed to sustain that feeling of home and agency.

Another deficit in domestication studies, in my view, is the emphasis on the information and communication technologies (ICTs). The main gadgets addressed in such research are the television (for example Morley 2006), the mobile phone (for example Sørensen 2006) and the computer and/or Internet (for example Bakardjieva 2006, Haddon 1992, Ward 2006), but basic household appliances that have been in the home for a while have not been examined. Although ICTs are an interesting research focus, they are not the only technologies in the home. The domestication processes of ICT are affected by the older and more familiar technologies because no technology is domesticated into the home in isolation. As I commented earlier, purification is a concept that does not distinguish between the older and newer, between information and non-information technologies, but it is a process that entails meaning-making processes of all of them. In addition, focusing on ICT in general is problematic as it is not a homogenous group of devices. As Lie (2006, 167) has written:

ICT indicates rather familiar items that are included in the everyday routines of many people, at work, for entertainment, and for social activities. ICT is a part of a variety of activities related to different aspects of people's lives. However, we still tend to talk about ICT as if it were one thing.

If one of the devices belonging to the group of ICT is domesticated and given meanings to in a specific way, it does not mean that some other device within that group acts the same way.

Finally, empirical studies about re-domestication and de-domestication are scarce in domestication studies. Even though these processes are mentioned in the theoretical discussion, empirical research that shows examples of how re- and de-domestication actually work is rare. This lack might be, once again, related to the emphasis on ICT. ICT has directed researchers' attention to the initial process of domestication as it was quite new in the households when the studies of domestication started (Silverman et al. in the early 1990s). Emphasising my point, in addition to the current and new ICTs, the interest in domestication studies is explicitly directed toward the future. For example, Berker et al. (2006, 14) observe that technology design is moving toward more invisible technology and "the more invisible technologies are, the more difficult they become to 'tame'".

The lack of research on re-domestication and de-domestication may also stem from too stable a view on the world and things. As Hand and Shove (2007, 97) criticise in their study about freezers: "As with studies of innovation and closure, there is a tendency to think of appropriation as a bounded rather than an on-going process." They (*Ibid.*, 95) argue more specifically that "[h]istories of technological stabilization fail to (...) appreciate the enduring fluidity of things like the freezer, in part because they take the object itself, rather than the object in use, as the unit of analysis". Put differently, domestic appliances are more like processes than stable units, and their use, significance and symbolical meaning are subject to change as the world outside the home changes and people's lives inside the home alter. The study by Hand and Shove²⁷ is extraordinary in its scope as it addresses a domestic appliance that is considered "normal" and "ordinary". In other words, it could be said to be

²⁷ See also Gregson et al. (2009) for the idea of "becoming of consumer objects", the view in which "consumer objects are continually becoming in the course of their lives in the domestic" (*Ibid.*, 250).

domesticated. Nevertheless, the researchers manage to show that despite its "normalisation" and domestication, the meaning of the freezer is still unstable and subject to change.

Given my own research objectives, the interest in the design of future is an important research endeavour, but I argue that studying the future is inevitably partial if it does not acknowledge the whole range of domestic technologies or take into account the historical evolution. For example, the currently stigmatised nature of the television and other entertainment technologies could be interpreted as standing for de-domestication. Television sets were rapidly and quite easily incorporated, you could say domesticated, into Finnish homes in the 1960s. This was largely because the television enhanced sociality at the private sphere as neighbours and friends gathered together to watch television that was not yet part of every household (Sarantola-Weiss 2003, 16-17, see also chapter 6 for the recollections about the television). However, this kind of positive attitude is no longer widely expressed, and the television evoked mainly critical comments from my interviewees.

To understand the de-domestication of the television, it is worth considering the purification of the television and comparing it with the purification of one of the most basic technologies in the home, the refrigerator. The refrigerator is, according to the interviewees, almost invisible in the domestic realm: when I asked them about the most important gadgets in their home, they usually forgot about it. This invisibility means that the refrigerator does not need to be actively purified: it poses no threat to users, and it has found its place in the home as well as in the cultural order of things. At the practical level, it has its indisputable location in the kitchen, and this is publicly echoed as refrigerators are standard devices in Finnish kitchens²⁸. The refrigerator can also be considered being in its "right" place at the mental level because it is something that a person "really" needs. When the interviewees

²⁸ Sarantola-Weiss (2003, 371-372) writes that at the turn of the 1960s and 1970s, new housing ideologies emphasised rationality and differentiation of actions in the home. This mentality manifested itself in housing design as, for example, the place for the refrigerator was (and still is) determined right at the design phase. The standard role of the refrigerator could also be seen in rental apartments where landlords must provide (and locate) this technical object in the apartment, and if it breaks down they are responsible for acquiring a new one.

remembered the existence of this basic device, they usually emphasised its inevitable role in the home. For example, older respondents recollected the old days without refrigerators and said that they could never again live without it; it really is a base for fluent everyday practices. One female interviewee, for instance, thought back to an occurrence when her refrigerator had broken down during the mid-summer holidays. Given the fact that everything is closed during that time in Finland, this incidence had caused trouble for the interviewee, and she admitted being angry and irritated because "[t]he role of domestic appliances is to work". Accordingly, people live in harmony with refrigerators as long as they work and do not thus enter the social realm of the world. As Miller (2008, 152) explices:

(Material objects) have a certain humility. They don't jump up and down and confront you as critical symbols of yourself or your relationships. They don't theorise themselves or abstract themselves. Often one only really pays attention to them when they don't work, or look awkward or out of place.

The television, in turn, is more complex in terms of purification, and as stated earlier, it could be said to demonstrate de-domestication. In my interviews, the television was constantly stigmatised, meaning that it had to be purified and controlled. Contrary to the refrigerator, the television did not find its right place in the household that easily. In practice, it was criticised for being, for example, "ugly as hell", and many interviewees disapproved of its commonly central place in the living room and preferred television sets that are hidden. In addition to jeopardising the aesthetic order of the home, the television also trespasses the boundary between nature and society as it was reported to cause trouble in domestic relationships. In many cases, the viewing choices of a partner were said to irritate, and sometimes watching television had ignited a row lasting for decades (see chapter 5 about couples and technology). On top of that, the television is also publicly stigmatised and condemned for causing laziness and physical deterioration, which were effects that my interviewees frequently mentioned. The complex purification of the television could be said to crystallise in its double articulation. For Hartmann (2006, 85), double articulation means distinguishing between a text and an object. In other words, the television is at the same time a material object and a medium conveying message. Accordingly, the purification of the television is not just about locating and using it, but also programmes that are watched have to be purified and therefore controlled.

Therefore, the television clashes both with practical and mental ideologies and penetrates many seemingly social spheres. In other words, it has to be purified and controlled. If the television causes only trouble and fits none of the categories people try to sustain, why do people keep it in their home? In line with my interviews, the answer can be traced to a hectic work life and to the function of home in recovering from paid work. Respondents who worked said that the television is an escape from reality, and watching it provides necessary relaxation after a hard day at work. However, these accounts were hesitantly expressed, and also visibly purified, as most of the interviewees added that alongside viewing they usually pursued other tasks, such as knitting, reading, or playing sudoku.

In the case of the elderly, the television represented the outside world and kept company for them. It was said to keep them connected with things that younger people confront daily while going to work and socialising with other people. Quite many of the older interviewees were to some extent physically disabled, so the television was a gadget that integrated them into the modern world and prevented them from feeling isolated and lonely. Hence, it could be argued that the role of the television has changed in accordance with the outside world of the home, and this has caused its de-domestication. Yet, it is also the very reason why the television is still needed. Whereas in the sixties television represented novelty and contributed to the social relationships by gathering people together, it is nowadays primarily used for relaxation or feeling virtual closeness to other people, as people are working harder than ever, and the elderly no longer live with their extended families.

However, I do not wish to argue that the concept of domestication is useless in terms of domestic technologies. Instead, I try to point out that sometimes domestication may not be enough, and may be complemented with the notion of purification. Domestication is at its best describing what happens when a relatively new gadget enters the home realm and how it is taken in as a part of the everyday life. The four-phase process of domestication is particularly useful in these situations. Irrespective of this, problems arise when, for example, older, taken-for-granted domestic appliances are given meanings to. In such cases, the concept of purification is analytically more helpful. As already explained, purification is a common principle in the background of meaning-making in terms of all kinds of technology, and this way it affects all the mental and practical processes that are involved in the domestic

devices. A case in point is when some familiar device breaks down and causes anger and irritation in the user. These negative emotions are, I maintain, hard to explain with the theory of domestication, but they can be rationalised with the process of purification, which affects the relationship with the gadget and technology in general (this is explained in more depth in chapter 6 focusing on domestic appliances and emotions).

5 Giving Meanings to Domestic Technology through "Others"

*Kerää kynttilät pois,
emme tarvitse nyt romantiikkaa.
Kun olen hankkinut meille
turan täydeltä elektroniikkaa.*

Put the candles away,
we need no romance now.
Because I have bought us
a house full of electronics.

(Leevi and the Leavings: *Onnelliset* / The Happy Ones)

In the first analytical chapter, I examined the normative purification of technology and illustrated how people actively try to treat technical devices as "just" material objects that are used in order to achieve some goal. The aim of these statements was to put technologies in their right place: somewhere they can be distinguished from humanity and sociality. However, in addition to these critical accounts, the interviewees talked about domestic technologies and various social relationships, closely relating one to the other. In this chapter, I discuss the contradictory – and at the same time co-existing – processes of purification and show that no matter how strongly the purification is expressed, technologies are always given meanings to in terms of sociality, too.

While analysing the interviews, I was surprised how collective, social, and networked the meaning-making processes of technologies are. Although the interviewees sometimes spoke about technologies in the first person, using the pronoun "I", such expressions as "us", "she/he", "those, and "others" were more prominent. When the interviewees expressed their identity and categorised technical objects in technology-related issues, it was nearly always done in relation to somebody else. In the first analytical chapter, we saw that imagined other people were present in the

interviewees' accounts: those that act non-responsibly in terms of technologies, those the interviewees wanted to separate themselves from. In this chapter, I focus instead on "real" people: those who are somehow meaningful to the interviewee and have directly affected their relationship with domestic appliances.

Following Harry Sullivan (1955, see also G.H. Mead 1934 for the social self), I call those "real" people "significant others". Sullivan uses the term to refer to the forming of the "self", the process in which a child picks from the surrounding people the most significant ones whose behaviour and attitudes are the most relevant to her/him. Despite the origins of the concept, I think that the "significant other" is also a useful term in this research because these other people, "significant others", are the ones whose behaviour and thinking have most affected the interviewee's relationship with technical objects and the ways she/he gives meanings to them. Furthermore, Sullivan's term directs attention to the fact that the self is always social, and being (and becoming) an individual is possible only when there is feedback from other people. This also holds true in terms of technology relations. As I will argue in this chapter, people tend to speak about technologies through other people, and the ways they see themselves are formed in these relations.

Who are these significant others, then? First and foremost present in the interviews was the interviewee's partner. As I will elaborate in the ensuing section, technical objects are actively involved when the couples organise their joint domestic lives both at a mental and practical level. Being oneself, having certain ideas and attitudes, and acting in a certain manner, is possible only when compared with someone else's behaviour and thinking. In addition to the partner, it was common to refer to one's parents, children or friends. Accordingly, the last section of this chapter concentrates on people who do not necessarily live with the interviewee, but continue to have an important role when the interviewee ascribes meanings to domestic appliances.

In this chapter, I introduce different kinds of couples and their joint lives with domestic appliances. The analysis was pursued with a simple coding technique: I identified all the instances when the interviewees referred to somebody they know and who is close to them. This way I managed to form ideal types – or typologies – of diverse domestic relationships. However, one should remember that these examples reflect only the extreme cases of the data, and there were also couples

whose domestic life was not that vividly expressed. Accordingly, ideal types are derived from the data for analytical clarity and should thus be read as examples²⁹. In the words of Hagenaars and Halman (1989, 81):

By focusing solely upon certain pure 'pure' types and thus exaggerating certain specific features of the population under study, one tries to get a better and deeper understanding of the complexities of social reality: the 'overt' behavior of people is explained by, and is made intelligible from, their closeness to these pure, fundamental types.

5.1 Couples and Domestic Technology

All the couples were interviewed separately, that is, the partner was not present in the interview. Yet, each respondent talked about domestic technologies as a part of the couple. In practice, the individual accounts of oneself were expressed through the partner and how a certain object mediates and sustains the behaviour and emotionality in their relationship. The interviews were processes in which the "conjugal we" (Kaufmann 1998, 8) was actively present alongside the individual notion of oneself, and given the prominence of such couple talk in all of the interviews, it could be argued that the personal view of one's relationship with technologies was always created in accordance with the understanding of one's own position and role in the couple.

Kaufmann (1998, 56) writes about domestic commitment and explains that this "involves pooling the household tasks in such a way that the individual becomes part of a collective system". Furthermore, he elaborates that "[t]he two partners in the relationship have to define what the role of the individual should be in the couple" (*Ibid.*, 87). This domestic commitment and maintaining one's "self" in the couple were, indeed, a starting point from which the relationship with domestic appliances

²⁹ The use of ideal types and typologies could be compared with Max Weber's idea of the methodology of social sciences (Weber 1949. See, for example, Watkins 1952 for a clear explanation of Weber's thinking about ideal types). However, as Weber concentrates on forming abstract simplifications in order to compose a theory, I am using real examples of accounts to make the phenomena of domestic appliances and significant others comprehensible.

was described. The commitment was not only present when technologies were related to chores and domestic division of labour, but it was also a profound ideal containing all the issues of domestic appliances, including purchasing decisions, and as it will be shown, even expressing love and devotion to one's partner.

Domestic commitment and balance in terms of technologies were considered an ideal in the relationship, but conveyed in diverse ways by different couples, and not directly linked to how long the couple had been together. There was, for example, an elderly couple who admitted having discord in technology-related issues, and, in turn, there were younger couples who had managed to sort out these questions – at least for the time being. What seemed to be the core issue in the collective system in the home was some kind of normative ideal which was first realised in the domestic distribution of labour adopted by both members of the couple. Second, this ideal was seen in the purchasing decisions: who buys and what technology, whether the acquisition is negotiated and discussed properly in the relationship. Third, the process of locating the object in the home should be ideal for both, and obviously, the object should be used in a way that does not harm the emotional and aesthetic atmosphere of the family and the home.

There are practical restraints that affect purchasing decisions and placing of technology in the home. First, devices cost money, and especially the cost of big acquisitions is carefully calculated, even within the middle class families, which form the data of this study. Second, the division of rooms and existing sockets affect what can be situated and where. However, buying and finding a place for technology is not just a matter of these practicalities. As we shall see, technical objects play a greater role in the life of the couples and are also connected to the social questions of equality, morality, and affection. Further, decisions about where to place technological objects have implications for the meaning of these objects (Gregson et al. 2009, 267): for example, the meaning of the television set can differ greatly depending on whether it is placed in a closed cabinet or situated visibly in the centre of the living room.

As mentioned earlier, the ideal situation was not always achieved in a long relationship. However, when a couple had managed to sort out technology-related issues successfully, domestic technologies were considered invisible and

unquestionable. These people found it hard to explain their thoughts and sometimes considered my questions, truth be said, a little silly. When asked, for example, why a certain family member always times the VHS player, the common answer was that "it just is like that", and "there is nothing special about it". Nevertheless, concentrating on the couples whose technology-related actions and values were not that invisible, that is, they evoked critical discussion, it quickly became apparent that technologies and related routines do not "just exist", but the current situation in the home results from active negotiations and includes emotional work. As Silva (2010, 74) also states: "Household technologies, both as commodified market relations in themselves and as enablers of the adoption of other market relations, are inserted into daily routines and contribute towards negotiations of different patterns of gendered work in the home." This does not always mean verbal articulation since negotiations can be invisible and carried out without openly talking about the issues. Kaufmann (1998, 162) calls this kind of interaction "low-key communication": for example, indirect criticism of the partner, or strictly non-verbal action such as grudgingly picking up dirty socks from the floor.

When harmony – often a temporary one, as situations in life are prone to change – is achieved in the home, then everything and everybody, objects as well as people, are in their "right" place. Yet what this right place is varies depending on the couple in question. They have different conjugal and individual styles, and histories of categorising objects and people, but also different routine habits that are deeply rooted and therefore hard to amend. As we may all imagine, finding a balance and defining this "right" is not an easy task since it involves two people with their own histories and ideas of the future, as well as different devices that do not necessarily fit this picture.

At this point, I would like to emphasise that I do not claim that the so-called balance of technology-related issues in the relationship is some kind of ideal situation, or that if this balance is found, the couple will automatically be happy. First, finding the balance is a question of expressing the couplehood in the interview, which is something the interviewees were aware of and therefore keen to state to a strange interviewer. As a researcher, I cannot (or do not even wish to) judge whether their technology-related life really is as balanced as they say. However, if both members of the couple, who were interviewed separately, explained the same issues in the

same way, I can only assume their explanations must have some kind of reference to real life. Second, as a social scientist pursuing qualitative analysis based on the social construction of the world, my task is to show how people discursively give meanings to domestic appliances. As previously considered in this research, talk and ideals are closely related to practices, and these two cannot be totally separated from each other. Third, and briefly mentioned already, the balance and the ideal are always transient, and one minor change in one's life or in one's image of her/himself may unsettle the stability achieved and start the negotiations of the right places of objects and people all over again. In addition, balance can be considered an ideal state of affairs, something that cannot be completely achieved no matter how hard one tries. A couple can be happy, or at least content, without expressing any perfect balance, as it is often the compromise that counts, and sometimes even just a vision of a different situation may be enough.

Another issue I have avoided in this analysis concerns the equal domestic division of labour, or more precisely, the normative arguments about what it should be or how it should be acquired in the home. I am fully committed to say that the equality between sexes in the home, and obviously at the wider level of society, is an important issue. There are, obviously, different power relations between family members, and this can be called "domestic politics" (Mackay 1997, 278; see also Moores 1997, 235-236). For example, the question of domestic division of labour has fortunately been of interest in many sociological studies (see, for example, Baxter 1992, Geist 2005, Crompton et al. 2005, Sullivan 1996). My analysis, however, is not a political one. What I aspire to, instead, is to describe and elaborate on the couples' ways of expressing their relationship which is strongly mediated by domestic appliances – both at the behavioural level including the highly political issue of domestic division of labour, and at the emotional level in a way that technological objects sometimes serve as mediators between love and commitment. In the data, there are individuals who are not completely happy with their domestic situation and tell of their discomfort at doing all the chores alone. On the other hand, there are also individuals in the data who claim to be perfectly content pursuing the chores alone and sometimes consider a certain task to be a source of pleasure and joy for them.

Accordingly, the concept of equality is an ambiguous one in the interviews and I do not think that my task is to judge the couples' ways of organising their lives at home. In my work, I try to follow Miller's (2008, 275) notion of couples, ethnography and empathy. As he writes about his premises:

The expectation was that one spends sufficient time with some other people until there was at least the beginning of empathy; a sense of why they might understand the world in the way they do, believe what they believe, feel what they feel and take so much of their own world for granted.

5.2 Couples and Different Settings for Negotiations in the Home

Below, I will introduce different couples and different technology relations in the home. Although the couples expressed themselves in their own way and their situations in life varied, it will be shown that all of them still based their ideas of domestic appliances on the normative ideal and on the complementary idea of the couplehood. However, domestic life is about negotiations, and as we are about to see in the examples of three couples, technology-related issues are also an intrinsic part of these negotiations, and different phases of individual and conjugal life provide a stage for different settings for negotiations.

Expressing Complementarity – Riitta and Antti

The 52-year-old Riitta and 46-year-old Antti were a married couple with no children. They can be considered expressing the culturally and socially ideal in technology-related issues. Both of them talked about the domestic appliances of their home in a similar manner, and both maintained that they had come up with an arrangement which allowed both of them to live at ease.

Antti was a handyman who was very enthusiastic about his stereo system and considered himself a "hi-fi enthusiast". The most prominent feature in the interview was his account of this technical hobby, and he demonstrated his technology-related social identity through his intense relationship with his stereo system. After the

interview, he even invited me to listen to his stereo and wanted to demonstrate how magnificent the sound was. The following extract is from his interview in which he frequently mentioned his interest in stereo systems:

Take stereo systems and their speakers, for example. I think it was as early as 1997 when I heard those speakers live in the hi-fi shop. They were little sharp, but otherwise the sound was perfect, and I thought that now it is here! They were not big ones, but I was like "oh my God", I just have to have them. They were little sharp in the treble, but I thought that I was going to buy them at some point anyway. The vendor made me an offer of them, and I still have the brochure where he marked the price. It cost 17 000 Finnish marks at that time, the pair. These that I have now, these are more expensive because they are made of silver, those cones there. So, these were twice the cost, actually, but the treble is now perfect.

Antti's spare time, he said, was tightly related to his stereo, and he spent a good deal of time either listening to music or contemplating new purchases by reading international hi-fi magazines. Riitta, in turn, told me that she could not be bothered being excited about entertainment technologies, and she saw herself more as an aesthetic and design person, someone who was responsible, by her own will, for the overall appearance of their home. As she explained about the problems she had faced when trying to find a place for their television set:

My life became much easier when I realised that I can hide the television in that cabinet. As in many living rooms, I really don't like it that the television is here and everything else is constructed around it. People often decorate their living rooms in such a way that when you go in, the furniture faces backwards to you. The television is in the centre of everything and it dictates everything in the room. It irritates me enormously. It makes people anti-social and I try to resist that in my life. When my friends are visiting, I can devote myself to them and chat with them and not glance at the television like [imitates men using a very deep voice] "sport results are coming soon", or something.

Riitta's quote illustrates the domestic display of objects in the home: the decisions about how to place technological devices could be seen at the same time as a "performance for others and a marking practice contributing to negotiations of identity" (Hurdley 2006, 718). In other words, Riitta said she disliked people who valued the television higher than the social aspects of life (the television in the central

place). She thus promoted the identity of a person who did not allow the television to hinder her life and social relationships at her own home (the hidden television).

Riitta frequently highlighted in her interview that she preferred hidden technology, but she also revealed having a thing for design technologies. For instance, she had been craving for a high-class Italian espresso machine that is very expensive. Given their contradictory interests in terms of technologies, the couple's situation could easily turn into conflict. Yet, Antti and Riitta conveyed how they had succeeded in sorting out these conflicting elements, and that at that moment everything and everybody could be considered being in their right place.

Purchasing and Locating Domestic Technology

First, Riitta and Antti pointed out that the other half of the couple should be acknowledged in the purchasing and locating decisions of a technical device, no matter how different their interests actually were. Antti, for example, told me how their television sets had been bought in the past:

A: We have that older television set that Riitta wanted because of its appearance. It is so visible in the living room that she wanted it to be good-looking. And OK, it has a reasonable picture and sound. It broke down at some point, and we went to a shop and bought that Sony. However, I talked to a repairman I know. He said that bring me that broken one, and he managed to repair it in a second. That is why we have two big television sets. Earlier we had only a portable TV in the bedroom. Well, yes, we bought [the flat-screen television] mainly because of Riitta and her vision of the living room. I asked her then whether she wanted diamond earrings costing a thousand euros more, or whether she really wanted that flat-screen television. And she wanted the television. It was a sort of Christmas present, too. But I hope she will remember that! I said at work that she might be upset when Christmas comes and she doesn't get a big present. I am just a workman, you know. Wives can be expensive (laughs).

Q: But she wanted the flat-screen television?

A: Yes, and I wanted it too, sort of. To be serious, we also bought it because Riitta's vision is not so good, and the screen of the old telly is so small. She really had to make an effort in order to watch, for example, a film. She was really tense in muscles because of that. You do want the other person to see properly, don't you? After all, it's almost the same if you buy that telly now or

after two years when they're cheaper. Riitta can watch many films during that time.

In the extract above, Antti said that he did not think too highly about the quality of the new television and pointed out that they could have had it cheaper two years later. Nonetheless, he agreed to buy it in order to respect Riitta's visualisation of their living room. However, he indicated his dominance when he gave Riitta two options: she could have either diamond earrings or a new television set. In addition, he criticised, although with laughter, his wife's extravagant taste. This rather harsh statement was softened with laughter, and later, with a mention of Riitta's visual impairment, which in reality, was the reason that properly justified the expensive purchase. In Antti's words: "You do want the other person to see properly, don't you?" For Antti, that was the final point in the reasoning process of why to buy a new television, and he managed to put the television in its right place: it was purchased to serve a bodily need (visual impairment), and with it, he managed to show Riitta that he thought about her and her aesthetic preferences in the purchasing decisions.

As presented earlier, Antti's hobby with the stereo was a truly intensive one. In the interview, he often told me the exact money he had spent in a single device, or for how long he had wanted some gadget before he had managed to acquire it. Clearly, his hobby was not just a question of aesthetics in the home, but also one of money. Despite her interest in decoration and design, Riitta still managed to balance the couple's situation in terms of technologies, and she voiced the same kind idea of respecting the other person's needs as Antti did when talking about the new television set. Riitta mentioned her balancing position very explicitly when I asked whether Antti's use of his gadgets or their presence irritated her:

No, no. After the gadgets were located in the bedroom, I don't care because I don't have to look at them. When I'm in the bedroom, it is dark (laughs). And it is Antti's hobby. It is extremely important to him. He has to have one issue in this household that he can decide about and take care of just by himself. I am so dominating. I decide everything else: the colours of the sofa cushions, the colours of the curtains, what kind of furniture we have, and where everything is placed. A man has to have his own territory. That is the reason why I have not wanted to intervene in his hobby.

Jari Luomanen (2010, 135-175) analyses the discursive use of hobby in legitimising the uses of the Internet. The Internet is obviously a more complex medium to describe and account for than stereo systems and music, but important here is how people tend to lean on the concept of hobby when stressing the significance of some leisure time action. As Luomanen (*Ibid.*, 148) writes, hobbies in his interview data are first “described as free time activities without the stress and responsibilities of working life”, and second, “[hobbies] are often accounted for as being very dear and commitment to them is expressed in various ways”. As we have seen in Antti’s case, technology can be a hobby itself. Stereo systems are complex technical gadgets, and compiling the best possible audio system can be of great importance in the context of listening to music. Further, technology enhances the experience of music listening, and mediates the meaning of leisure time to the listener. Dedication, which Antti also expressed in terms of his hi-fi hobby, is a sign of a “real” hobby. As Luomanen (*Ibid.*, 151) remarks, “hobby is associated with seriousness, active participation and long-term commitment”. By using the concept of hobby, Antti and Riitta managed to justify the costly and time-consuming activities that technology requires in order to function properly. The process of hands-on work in compiling the stereo system is also significant. As Riggins (1994, 114) argues, “the home remains a refuge for hand-made artifacts because they embody so well signs of individuality, esteem, and personal relationships”. The stereo system, for Antti, was also a sign of his own skills and connected self-esteem; instead of buying a ready-made stereo system, he dedicated his time and efforts to build one himself.

Riitta reverted to the question of locating the stereo later in the interview and repeated that she was happy now that Antti’s stereo and the second television had been moved into the bedroom. This process of finding the right place for right people and right objects had clearly been a long one: finding this solution of “separation”, that is, Antti with his stereo and the television were situated in the bedroom, and Riitta with her television in the living room, had proved successful in locating people and objects and the so-called balance had been found. Such separation of objects – especially technological ones – and its link to gender in the domestic realm has been noticed before. Bell & Dourish (2007) examine the role of the garden shed in Anglo-American families and conclude that it is a thoroughly masculine place and an extension of the interior of the home. As they phrase it (*Ibid.*, 376): “It is a site of male habitation and practice”, a place that is filled with tinkering

tools, old and/or broken technologies and other material objects that are prohibited inside the house. Accordingly, the interior of the home can be considered more feminine, and as noted by some scholars, women are usually considered responsible for decorating and making the home (for example Shove 1999, 139; Leslie & Reimer 2003). The male place of the home seems to be on the peripheries, somewhere separated from the actual home and containing objects that are not considered suitable for the domestic atmosphere (see Bell & Dourish 2007). This traditional role of women as homemakers may, however, be under a process of change. In the context of the UK, Silva (2007, 153) argues that "[i]n contemporary narratives of the self the responsibility for maintaining relationships is less and less restricted to women. Men are expected to care". Put differently, men are also now increasingly expected to share in domestic chores, maintain and care for the home and the family.

In spite of this, finding the balance is not all about the practical location of the objects and actions. Kaufmann (1998, 138-155), who concentrates on couples' ways of handling the domestic distribution of labour, claims (following Mauss 1990) that their relationships are gift-based economies wherein one part of the couple gives her or his labour as a gift to the other. Even though its topic was not the division of labour, Riitta's previous statement was also an explicit gift to Antti. Riitta knew that Antti had compromised in order to respect her aesthetic preferences, for example, by moving his devices to the bedroom, so she was ready to make an effort for his sake. In another part of the interview, she continued to emphasise her supportive role in Antti's hobby by telling that "I have not said absolutely anything. I have just commented that 'all right' when a new device has been carried into our bedroom." Her counter-gift to Antti had not been wasted since Antti acknowledged and appreciated Riitta's role in his interview and continued that "Riitta always pushes me that buy, buy, if I'm really excited about some new apparatus. She has never said that don't buy."

Following Marcel Mauss's (1990) famous anthropological analysis of the gift, Kaufmann (1998) notes that the gift is not completely value-free and altruistic as it always embodies calculation at some level, although that is often unconscious. To give a gift is a powerful act since it leaves another party in gratitude, and if the gift is not returned in some form, the debt starts to accumulate. In the case of Riitta and Antti, this argument cannot be empirically proved, but it may hold true: when Riitta

gave Antti a gift in the form of her supportiveness, Antti was likely to return it to her. He, for example, consented to buy "an aesthetic, not-so-high-quality television" and agreed to move his stereo system into the bedroom where the gadgets were not visible to Riitta. Nevertheless, this is a matter of speculation. I argue that perhaps these acts that aim to benefit the partner are actually an expression of one's love and care for the other. This is a claim that I am going to elaborate on and justify later in this chapter.

Using Domestic Technology

It is not only the purchasing decisions of technologies that need to be balanced in the couple's life, but also the domestic division of labour and use of technologies. In Antti and Riitta's case, the domestic division of labour had been fixed with an open agreement that seemed to suit both of them. As Antti explained his responsibility for cooking:

A: I cook on Thursdays and then I need the stove, the refrigerator and stuff. And I cook on Saturdays and Sundays, too. And if needed, I also cook on other days.

Q: How has it become like that, that you do the cooking?

A: We made an agreement when we had a pipe repair and renovated our bathroom. At that time, my job was to clean the bathroom and the toilet. That was my chore and I did it quite well. When we bought that new shower stall that is made of bent glass, I realised that I couldn't clean it properly enough. Then Riitta said to me that she wouldn't mind cleaning it and that she could clean the bathroom and the toilet if I cooked. She doesn't like to cook. I thought that was fine. Maybe I am better at cooking. I'm not sure, though.

The extract emphasises the "ideal" nature of their relationship, and the fact that chores have to be balanced in such a way that one person can think that her/his actions are, once more, in conjunction with those of the other person. At its best, the technology-related actions may end up being enjoyable actions that bring the family together. For example, Charles & Kerr (1988) show how people are aware of the positive and comforting influence of joint meals and cooking. In the same vein, Komter (2005, 201) argues that "[c]ompanionship is best exemplified by the communal sharing of a meal and the exchange of food (...) The ritual of hospitality,

the sharing of bread and other food, is a prototypical example of the morality of reciprocity". This could also be seen in Antti's case. Later in his interview, Antti brought up the issue of cooking once more and told me what he thought of the stove:

The stove, it's really, really...As a matter of fact, the stove is the heart of the home. It's warm, sort of. It gives me a vision that she [his wife] chats there [in the kitchen] holding her glass of red wine and I cook, usually with the wok, there. We make the world a better place when we talk. It's something that feels like the real home. You're not in a hurry, and if the food also turns out good, it is quite nice, isn't it?

Mundane technologies, the domestic division of labour and its successful balancing may serve as an important mediator in couple's life. Worth emphasising at this point is, however, that finding the balance does not necessarily mean that the chores are equally distributed so that both partners pursue chores for exactly the same time. As in this case, Riitta told me that, as with the traditional division of labour (see, for example, Lammi-Taskula 2004, 184-185), she was solely responsible for the laundry:

I'm responsible for the laundry in our family. I know many other families in which the man stumbles already at the sorting of it (laughs). It's just... women bother to read the washing instructions in clothes and sort them accordingly. Men just stuff all into the machine and hope that everything goes well.

Riitta justified her responsibility with the notion of men's inability to do the laundry, and argued she knew other families similar to hers. I think that this is not necessarily the case. Her overall contentment pursuing this task alone may lie in their otherwise balanced relationship in terms of technologies and in the fact that she was able to acknowledge that her wishes in those issues were being heard and taken seriously (see, for example, the acquisition of the new television set). Furthermore, although Antti did not explicitly acknowledge Riitta's efforts with laundry in his interview, he did it by stating that he knew that one should wash different clothes and materials at different temperatures, but he did not know "how to accomplish that with [their] washing machine". In addition, he admitted that he ought to be able to do it, and planned to learn it since he could not be sure "whether Riitta leaves me at some point (laughing)". Later in the interview, it became evident that Riitta was also responsible for washing the dishes, as Antti mocked himself for being so stupid that he did not

know how to use their dishwasher. He also admitted that he rather washed dishes by hand, or if Riitta was around, he asked for her advice.

Such self-irony and undermining of one's own technical competence was a prominent feature in all of the interviews. If the respondent said that only one member of the couple used a certain device (in Antti and Riitta's case, the stereo and the washing machine), it was common to explain it as Riitta did:

I don't even know how to switch that stereo system on (laughs). There are so many gadgets and I don't remember which one is switched on from where. I don't usually touch them. I have a radio that is hidden there, behind the curtain (laughs). It's an obsolete one, you see. It's hidden so that we don't lose our reputation (laughs).

This kind of self-irony was, unsurprisingly, most commonly exhibited by male respondents in terms of the washing machine and by female respondents in terms of the stereo system. The complementary nature of the accounts within the couple is once again an indicator of the ideal or an effort to achieve it. Expressing the functional couple involves respecting the other's needs and acknowledging the other's technical competence.

To my surprise, given the overall masculine associations of computers and computing (see, for example, Brosnan 1998, Clegg & Trayhurn 2000, Durndell et al. 1995, Herring et al. 2006), the computer was an object that was occasionally mastered and maintained almost solely by women (not only with Riitta and Antti, but also within younger couples). Nevertheless, the Finnish context may explain this: Vehviläinen (2001) points out that women use more IT in Finland than men. These IT-competent women of my data did not emphasise that fact themselves, but their male partners, who were not ashamed to admit that their wives or girlfriends were more accomplished with computing, brought it into daylight. Antti, for example, explained that "Riitta is a hundred per cent better with computers", and "I can only Google what I need, and I don't even find what I'm looking for."

As it stands, technical competence, and especially lack of it, were revealed and discussed only by the person whose own deficient abilities were in question. To maintain technological complementarity within the couple, it appears important to come clean with one's own technological shortcomings and recognise the other's

strengths, and yet again, it was not suitable to ridicule the female partner's abilities³⁰. This recognition of technological abilities was, however, gendered in such a way that it was more common among women to state that they "don't understand anything about technical issues", or "now my stupidity is revealed because I don't know anything about technology". Even if I ensured the interviewees at the start of the interviews that the aim of the study was not to measure their technical awareness and answering the questions did not require any knowledge about technology, I heard announcements such as the above several times when I started to interview some of the female respondents. Interestingly, despite ridiculing their own competence, these women actually knew something about technical issues, and they were fully able to use the devices they needed in their everyday life.

What was common for these women was their overall attitude toward technology. One could say that they were technophobic³¹ in the sense that they had doubts concerning their abilities with gadgets, and they often considered themselves too old or too thick to learn how to use them. Moreover, their partners were quite often perceived to be, by both, providers of technology in the household, meaning that these men were mainly responsible for purchasing, installing, and using the technology in the home (apart from the washing machine). In addition, these men served as technology counsellors to their partners. This is not a new matter in technology studies as, for example, Berg & Teigen (2009, 33) note in their study of

³⁰ This finding can be compared with the study of Virve Peteri (2006, 263-270, see also Peteri 2007, 22-24), who notes that in the couple interviews, it seemed acceptable to gently mock the male partner's technical competence, but not the other way around. As Peteri concludes, the culturally existing power balance and the overall masculine nature of technologies may explain why it is all right to indirectly question the technical abilities of the person who is commonly considered technically competent.

³¹ Technophobia is commonly used to refer to a negative relationship with technology. For example, Selwyn (2003, 104) sums up that "technophobia clouds an individual's perception of the technology in question, making it appear somehow 'not for them'". What I mean by technophobia in this case could be depicted with the words of Rosen & Weill (just replace the word "computer" with "technology" or "technologies") (1990, 276), who define technophobia as including:

- Anxiety about current or future interactions with computers or computer-related technology;
- Negative global attitudes about computers, their operation or societal impact; and/or
- Specific negative cognitions or self-critical internal dialogues during actual computer interaction or when contemplating future interaction.

consumption and Norwegians that “men spend twice as much on technological equipments such as televisions and computers”.

At some level, women's underestimation of their own technical competence may result from their relationship and their established technology roles in the home. Judging by these women's later accounts of their life, they were not seemingly thick (their own word), and as mentioned, they were capable of using domestic appliances. With this in mind, it is these balanced and complementary technology relations within the relationship and the position one has agreed to fit in that may cause the illusion of incapability. This argument holds true when compared to the study of Berg & Teigen (2009) on consumer competences in households with one vs. two adults. In terms of technology, they concentrate on examining “whether the opportunity to share consumer responsibilities within the couple produces gendered roles and competences” (*Ibid.*, 32). The conclusion is that their hypothesis of the specialisation of the roles of women and men within the relationship was supported by the findings of their data. As they (*Ibid.*, 39) write: “Women with a partner are less likely than others to master the technological markets”; and “Even wives who select husbands who agree on a more gender-equal division of consumer responsibilities in the daily consumption markets are happy to leave purchases of technological products to their husbands.”

This situation has, of course, deeper roots in our culture and society, and it is not exclusively the couples and their established roles that lead these women to underestimate their skills. The widely reported fact is that when women are not used to acknowledging their technical competence, it is quite usually connected to men (see, for example, Cockburn 1985). Respondents, their roles, values and behaviour, were certainly affected by this image, and the female respondents recreated the social myth in their lives. Nevertheless, to blame only culture and its normative values is not the only answer since people do not have to adopt those values. People may choose to act differently, as we saw in the case of the computer that was often considered the realm of the female partner; it is also the couple and their mutual relationship that is affected by different technical devices recreating (or not recreating) the culture.

There was one exception when a person was explicitly allowed to mock her partner for using, or actually not using, a device: a wife or a girlfriend could make fun of her partner who was unable to use the washing machine or other household devices used for cleaning and maintaining the home. As Riitta stated, and which Antti echoed, men simply seemed incapable of washing the laundry. In their quantitative study on household appliances, Abeliotis et al. (2011, see also Silva 2010, 102-104 and Pantzar 2000, 59) also detect the connection between women and washing machines. That myth was constantly repeated in the interviews, and the female respondent often ended the discussion about the issue by remarking that "I think that I'm just better at it." It is hard to believe that these reasonably intelligent male interviewees, several with extremely good technical knowledge and competence, were truly incapable of using the washing machine with usually only one or two buttons and/or controllers.

I argue that the question is not about the capability or the competence, but once again, about the position that a person has adopted within the couple. This complementary position was also seen in the interviews of the male respondents wherein they all remembered to praise and be thankful for their partners' efforts and skills with the washing machine. Arguably, this acknowledgment of partner's efforts might be a way to avoid the chauvinistic label, but the more important feature here is that they tried to sustain and obtain the balance and avoid debt within the relationship. As we have seen, purchasing, using, and locating of technologies are, in addition to the practical structure and infrastructure of the house, a matter of reciprocity, and as Kaufmann (1998) argues, a form of gift. Washing laundry is a kind of gift, and since gifts are never completely free, they have to be somehow appreciated or returned. Gratitude can be expressed first at a practical level, for example, by dividing the chores, but as this is not always feasible, the counter-gift can also be verbal. Sometimes this discursive acknowledgement may prevent the debt from accumulating. At times, also the so-called "emotion work" can be used as a counter-gift to the partner. As Hochschild (2012, 78) writes: "In the deeper bonds – as between wife and husband, or between lovers, or between best friends – there are many more ways available to repay a debt; emotion work is only one of them." In other words, expressing love or other positive emotion toward the partner can also be used to sustain a balanced relationship.

It is possible, of course, that washing laundry is occasionally pursued solely in order to express love and care for the family. Silva (2007) writes about "emotional capital" and "emotional investment" that some women have for the sake of their families, which is expressed by cooking, washing laundry, and cleaning. In other words, these women sustain the home and therefore the whole family, as the home is the central family unit. By addressing housework and domestic division of labour this way, it becomes evident that not all women conducting housework feel repressed in terms of their partners, but their efforts may be approached from the perspective of active subjects maintaining their identity and expressing love and nurture to others. A similar argument is made by Pink (2007, 169), who asserts that "it is through laundry expertise and practice that women are empowered in the home". Admittedly, as Pink (*Ibid.*, 170) further argues, women are not bound to the "existing norms about cleanliness", but they may "stretch norms and conventions, which ultimately implicates them as agents in broader processes of change". However, as I have tried to point out, some kind of counteraction – so-called counter-gift – is still preferable in such household arrangements. In addition, Pink's (*Ibid.*) informants were housewives working none to part time, so they are not fully suitable for comparison in this case.

Expressing Controversy – Kaija and Tuure / Minna and Kari

A couple expressing a different style of negotiation in technology relations was the 60-year-old retired hairdresser Kaija and her husband, 61-year-old retired engineer Tuure. Tuure was, in his own words, a technology enthusiast and hobbyist, who had repaired broken technologies from cars to vacuum cleaners and from televisions to computers. He had three computers and two televisions, which he used simultaneously, and he stated that "sense of technology is an innate feature of a person" and "technical thinking is in the genes". Given his age, he was really active with novel technologies and used computers and such computer-related applications as Skype and genealogy software fluently. He also followed the latest innovations in technology and was familiar with the latest smart applications that could be installed in detached houses. However, he did not appreciate this evolution and gave me long and detailed accounts about the faults of the latest innovations. He criticised, for example, the prices and argued that these applications did not provide the surplus

value they should. Further, he stated that although he understood technical issues and was technically competent with all kinds of devices, the majority of people were not, and the latest innovations were "diabolically hard to use" compared with the older ones.

Kaija, on the contrary, was seemingly very nervous when her interview began, and she told me she was afraid of "tricky questions about technologies". As mentioned previously, she had adopted a submissive role in the couple in terms of technology and relied on Tuure's role as the technology provider. She, for example, told me how she was wary of computers at first, but it was Tuure who forced her to attend a computer class:

At first I opposed computers very much, at that time I was still working. I didn't want electronic cash registers or anything in my hairdressing shop. However, computers became vital to Tuure, and he started to pressure me that "now you have to learn to use computers". And I went to the class because I knew that I couldn't have learned to use them if Tuure had taught me. That would have been all fire and brimstone (laughs). Now I know how to use e-mail and my interest has grown.

Later she told me how hard it was for her to learn to use computers:

I was afraid that the computer would break, or I would do something wrong. And those viruses, I was scared of them immediately. You know, if I did something wrong, then it would mess up all the programmes in that computer. If I didn't have Tuure who understands the gadgets and knows how to repair them, I don't think that I would have had the courage to use them. If something happens, I just ask Tuure what to do.

At a first glance, Kaija and Tuure seemed to have a complementary relationship in technical issues: Tuure is the provider and counsellor and Kaija is settled in her position that is complementary to Tuure's. However, later in their interviews, they revealed that technology-related issues had been, and continued to be, a question of struggle, and some issues were still under negotiation.

The 34-year-old Minna and 39-year-old Kari formed another interesting couple that did not express ideal technology relations. This couple was quite similar to Riitta and Antti: Minna was very much into design and decorating, and she was the main user of the computer in the family, while Kari admitted being an entertainment

technology enthusiast and following the latest innovations closely. Moreover, Kari appreciated his stereo system and music as he worked as a musician alongside his day-time job in a warehouse. Minna, in turn, was a free-lance journalist and worked at home when she was not pursuing interviews outside. What separated them from Riitta and Antti were the children. Minna and Kari had two little girls, both under school age at the time of the interviews. Consequently, purchasing, locating, and using technology did not concern only Minna and Kari; both acknowledged their role as parents and educators in terms of domestic appliances. Contrary to Kaija, Minna was an independent and competent user of technology who promoted equal gender roles in her interview. For example, when I introduced the probe at the start of the interview, she refused to divide different devices into masculine and feminine and announced that she did not want to support unequal images of sexes. Ideals do not always meet the practice, though, and despite her values, Minna and Kari's home was quite traditional – for example washing laundry was solely Minna's responsibility.

Purchasing and Locating Domestic Technology

As we saw in the case of Riitta and Antti, the first antecedent to complementary technology relations can be found in purchasing decisions. Ideally, either both members of the couple have their say in the buying process, or one of them gives the other the mandate to decide what and where to buy. This ideal model actualised in Kaija and Tuure's case only in terms of kitchen appliances: the previous kitchen renovation had encouraged Kaija to demand that all kitchen appliances should be bought new. As she reported:

Q: Who makes purchasing decisions in your family?

A: Tuure. Absolutely.

Q: Do you discuss these things or...

A: They are just brought here, the devices. I just realise at some point that we have something new here. Then he even tries to explain that "we have had this a long time". He just says that "don't you remember"? So yes, it is exclusively Tuure who makes those decisions. The only exception was the kitchen and those things that are in the utility room, the washing machine and the tumble dryer. I demanded to have them all new when we moved here and renovated.

Tuure echoed Kaija in his interview and admitted that he had been the main technology provider in the household, at least until the kitchen renovation. He told me that their kitchen appliances were "the first totally new ones" and selected "in a joint agreement", while the predecessors had been damaged devices that he had chosen and repaired. Tuure did not openly comment on the demands made by his wife, but bypassed the issue by stating that it was Kaija who had said that all the older devices in their home had been once broken, then repaired machines. One can find a hint of reciprocity in his statement as he implied that without her he would never have bought the new ones.

Another controversial issue concerning technology purchases in Kaija and Tuure's life were the big television sets that were placed side by side. Tuure admitted that it had been because of "Kaija's commands" that the televisions and his computers had been located as they were, and without her he would have distributed them more widely in the home. To soften his statement about his wife, he also added that "well, they are quite practically located nowadays. The places are OK. They are in their right place".

Kaija, on the other hand, was more talkative about how her husband bought and located technical objects in their home, and she told me that having two television sets was "solely my husband's decision and I don't approve it at all". Kaija did not spare her criticism when she described how the appliances had been placed in their family:

A: We have had awful fights about how to locate all the devices in our home. I told you that we have three television sets, and he [her husband] also carried one into the guestroom over there. I had told him that that room is a room where there will be no electrical gadgets at all. You do not bring any televisions or stereo systems there. Nothing! Then he tried to carry some devices there, but I switched them all off.

Q: You want that room totally free of electrical gadgets?

A: Yes, one has to have a room for retreat. There are only books and a good armchair. I don't even want a phone there.

Kaija's statement denotes that locating technologies is an issue of balance and power relations. In another part of the interview, she also referred to "Tuure's room" that

was a tiny room filled with computers, scanners, radios, and other technical stuff. She described this place as a "mongrel" and indicated that she never visited that room because it was "decoratively so ugly" and "all the stuff billows over you" when you enter it. Our previous couple, Riitta and Antti had succeeded in this kind of "separate arrangement" as both appeared to be happy that Antti's appliances were located in the bedroom, and Riitta had accomplished her vision concerning the hidden television set in the living room. Kaija and Tuure's situation was not that complementary since Kaija explicitly protested about her husband's devices entering their joint living space. In addition to Tuure's own gadget room, there were two enormous television sets that Kaija disliked in the living room. To compensate for her unequal position, Kaija had tried to create her own space completely free of technology. However, as she burst out, Tuure had ignored her effort when he attempted to bring his devices into that space, too.

Other households also seemed interested in replacing the old television, and in every one of them, it was the male partner who was more willing to do this updating. In the interviews of Minna and Kari, it became clear that the issue had been present at least for a year. They had somehow managed to keep the balance as Minna opposed the purchase and Kari sort of accepted her view, yet continued to push her to make a move. As Minna said: "Nowadays it is about buying that television set. My husband has been talking about a new television for over a year, but I am stopping him. The compromise at the moment is that when the prices come down, I might think about it." Later Minna continued to describe her down-to-earth role in buying entertainment appliances by openly criticising her husband:

Q: Do you discuss technology purchases?

A: Well, yes. Or maybe it is more like harping on. For example, I think that our television is good-sized; you can see the picture in it. But the husband "knows" that technology develops and the picture is getting better, so we should buy a better television, bigger and fancier. He even fantasises about a video projector! But I don't... Maybe it is about values. Do I really want to put a thousand euros into a television that shows me the same programmes as the old one? When that current one explodes, then I think it's time to buy a new television set.

Women's such down-to-earth attitude and men's keen interest in entertainment technology featured prominently in almost every interview. As Gray (1992, 189)

mentions in her study on entertainment technology (especially the VCR) and gender, “the majority of the women were persuaded into purchase by their partners”. It was women, however, who were able to ponder the qualities of washing machines and dishwashers, while men preferred to describe the features of television sets or stereo systems. This can be explained by the findings of earlier studies claiming that men, as opposed to women, like to impulsively buy technological and entertainment items (Coley & Burgess 2003), as well as instrumental and leisure objects (Dittmar et al. 1995). As Pantzar (2000, 131) also argues: “One should sell innovations to women by virtue of their practical benefits. Man responds to technology with a conviction of a passionate hobbyist.”

The different views of Minna and Kari on how to locate devices in the home could be compared with those of Kaija and Tuure. In Minna and Kari’s household, the devices had not all found their right place and family members were not all satisfied. Minna, for example, told me how she had moved the television set without discussing it with Kari. Moreover, she was not satisfied with Kari’s numerous speakers in the living room:

A: Actually, I moved that whole shelf and the television set into that corner last week and I did it without permission. Earlier it was over there, but when I purchased that table and did not find a place for it, I had to move the television. And yes, it evoked a little discussion like “why have you done that”? I admit that now there is a problem because the sunlight reflects from the screen. But hey, that complex is so huge; there are so many bloody speakers. Yes, there are five speakers in there, and I do think – and I think that many women share my feelings – that do we need all of them? Again, if we had more money, it would be nice to integrate those somehow, that entertainment centre. Then it would be a nice part of the decoration. Now it just is there, huge...

Q: You are irritated because it is so big?

A: Well, in the end, it doesn’t bother me that much. But for example that [digital] box there, at the television set, I think that we should locate it somewhere else. But I have been told that it has to be there. So there it is. (...) And then there could be some kind of policy with those colours. Three of those speakers are approximately the same colour. Those are actually speakers taken from the old stereo system, those on the shelf. We have little white speakers also, but apparently they were not sufficient enough for my husband

and he has put in those there. I would prefer putting something else on that shelf or leave it empty.

Quite frequently³², as in the case of Riitta and Antti, it is the female partner who is concerned with aesthetic issues and tries to organise the devices so that they will not be a threat to the existing decoration of the home. Yet again, entertainment appliances were considered big and ugly and too visibly present in the room unless hidden in some way. However, after her outburst of frustration, Minna conceded that after all "you also have to acknowledge the other person's needs". This was clearly the direction in which they were heading in order to find a balance, as Kari also talked about Minna's needs and planned, for example, to purchase a more effective washing machine to ease Minna's responsibilities.

Interviewees frequently described how technologies moved around the house and it might sometimes take years for a certain device to find its place. To complicate this matter, when an object has finally found in its place, a minor change in family's life may unsettle things, meaning that gadgets may have to start their migration all over again. The relocation does not concern only technical objects, but also practical human actions and the inhabitants' outlook on practices, such as the domestic division of labour and the notion of domestic commitment. Tim Dowling (2008) offers a good example of this in *The Guardian Weekend* column by depicting how no one in his family spends time in the living room anymore because its television is broken. Instead, the family members socialise in the kitchen where "the tiny, fuzzy kitchen telly" is. The human relocation took place without anyone openly talking about it. Suddenly, everybody just happened to find their way into the kitchen. In Dowling's case, a single object of the household, the broken television, was the catalyst for the human movement.

Such non-verbal, low-key communication about how to place gadgets was also visible in the household of Kaija and Tuure. Even though Kaija had told Tuure that she wanted one room without any electrical gadgets, Tuure had still brought some devices into that room. Kaija's non-verbal response to his actions was quite clear: she unplugged all the devices. A similar situation was reported in the home of Minna

³² This was not a clear case, though, and there were also some male interviewees who were very interested in aesthetic issues in my interview data.

and Kari, when Minna had relocated the television without asking Kari, and as they both told me, that one-sided action had evoked "a little discussion" between them. Accordingly, technical devices do not just enter the home and start being used. People's attempts to find the balance and right place for objects and themselves involves a complex array of efforts, and these processes never seem to be completely accomplished.

Using Domestic Technology

Unsurprisingly, the most controversial subject regarding the use of domestic appliances in the relationship between Kaija and Tuure was watching the television. In her interview, Kaija told me at several occasions that she was quite picky with programmes and preferred that the television was not always on, but only when it was really being watched and concentrated on. Unfortunately, this did not happen in their household because Tuure wanted all three television sets (one downstairs in the kitchen and two upstairs in the second living room) always switched on, and sometimes he even watched two different programmes simultaneously. Once again, this was a situation where two different needs did not meet, and in order to live under the same roof and sustain the image of the complementary relationship, the couple found ways to mitigate this contrast.

Something about Tuure's passion for television was revealed in his comment on the digital television stick that can be plugged into the computer:

I get really excited when I plug the television stick in. Then I can watch nine channels on the computer screen at the same time. It was, you could say still is, such a nice surprise that you can watch nine channels. You won't miss any programmes.

Furthermore, according to Kaija, Tuure spent his time watching television even at their summer cottage, and the first thing he did when arriving at the countryside was to install the television antenna on the roof. This passion for television was, one might say, quite unusual, and Tuure seemed to know that himself, too:

I usually watch two programmes simultaneously, because they broadcast good programmes at the same time. The best scenario is that one programme is in Finnish and the other has subtitles. Then it's easy to watch them both. (...)

Sometimes the second programme is something that my wife watches, too, but she cannot watch two simultaneously. 25 years ago, when we still lived in our previous house, I watched two programmes while I was recording the third, and then there was the fourth function at the same time...I don't remember what that was. Then I wondered that is this sane anymore (laughs).

The quote illustrates how Kaija and Tuure's situation had evolved during the last decades. According to Tuure, he had truly progressed a great deal since their early years and had changed some of his habits to balance the technology relations in the family.

It was not only the television that caused discord in the families, but frequently, the computer was mentioned as a controversial device that had changed the routines and power relations in the household. This seemed to be a problem especially in the families of the younger respondents (two of the older couples did not own a computer, and the middle-aged ones had managed to solve the computer problem either by declining to have one at home or by locating it in such a way that it did not bother others and threaten social relationships). Worth noting is that the female partner's use of the computer was never considered problematic. It seems that only women restricted the family members' use of some appliance. This is also discussed by Virve Peteri (2006, 272-280), who claims that women acted as technology controllers in the family, and even if they spent a lot of time using the computer that would not be perceived a problem, but considered "their own time" and a way of relaxation. In Minna's interview, she justified her controlling role by referring to the children's needs. If she thought Kari spent too much time at the computer in the evenings, she would ask him: "“Why are you there? The children are at home and we could spend some time together as a family.” By referring to the children, Minna managed to maintain her balance-supportive role: it was not only her who would suffer from his computing, but his behaviour threatened the integrity of the whole family, something that is culturally considered important and worth cherishing.

As mentioned previously, washing the laundry was, as it was traditionally, mainly female business in my data. Regarding the whole interview data, there was only one youngish couple who separately reported that they both did the laundry, and it was simply the question of availability: whoever happened to be at home and have time would do the chore. Given Minna's ideals of equality and her emphasis on

untraditional gender roles, it was hardly a surprise that she found her role as the main housekeeper less than satisfactory, and she articulated her annoyance to me:

Occasionally I feel – and actually I do, it's not just a feeling – that I do all the chores here. Then I might have a huge and intense fit of rage, like "do your own laundry, man" (laughs). But it goes away. Next morning I'm feeling much better and cheerfully do my man's laundry (laughs).

Such softening of the statement with laughter and reference to the fact that one can sometimes enjoy doing the chores was very common when talking about unbalanced issues in terms of domestic distribution of labour. This can be seen as part of expressing couplehood and sustaining complementarity: although there are disagreements in the household, the couple is content enough. Further, it seemed important to the interviewee to point out that she/he was aware of this unbalanced situation and was willing to do, or had already done, something to establish a more complementary relationship.

5.3 Other Significant Others

Parents, children, and friends also had a role to play in technology-related issues when the interviewees ascribed meanings to technical appliances and related practices – even though the partner was commonly regarded as the main "significant other". First, in regard to all these significant others, technical devices connected people when they were given as gifts, recycled, and sold within groups of people. Domestic appliances were not very successful gifts because usually they were the very objects that ended up, unused, in the farthest corner of the cupboard. For example, the 42-year-old Miia admitted having an electric citrus juicer and a food processor, which had been gifts and were used only once a year. Furthermore, technical devices wandered from one family to another, and sometimes an object found its right place in another household from the one for which it had first been bought. To illustrate, Miia continued to introduce her household devices and told me that their designer toaster was bought from their friend who could not find a place for it. Besides wandering from one place to another, or from one person to another, the migration of technology could also happen within one household. As

we could see in the case of the couples, finding the right place for an object might take years and sometimes the task might never be accomplished.

Parents

Kaufmann (1998, 26) writes that "[t]he history of childhood is the gradual process whereby, in the course of many different stages, the individual develops autonomy as far as cleanliness and tidiness are concerned". The analysis of my interview data shows that the childhood home is the place where people have had their first encounters with technologies and have been taught the basics of cleaning and cleanliness, which in this machine age are much related to technical appliances. This impact of childhood home is also detected by Gram-Hanssen (2007, 1185-1186) in her study on routines and domestic technologies. Although some of the older interviewees occasionally referred to their parents and childhood home, the role of the parents was most clearly seen in the interviews of the youngest respondents, the 23-year-old Pia and the 23-year-old Valtteri. Their joint life had only recently begun and forming the "communal we" was clearly at a transitional phase. For example, they purchased technologies independently with their "own" money. Moreover, the apartment where they lived had originally been bought by Valtteri while Pia had moved in only a couple of months previously. The early status of their relationship could also be seen in their technological appliances as they were thinking of what to do with the devices that had doubled when they had moved together. Furthermore, they referred to certain objects as "Valtteri's" ("it is his") or "Pia's" ("it is hers"), alluding that they were not considered jointly owned. When a couple moves together and starts to form and express a couplehood, home décor and objects are used to "express both their togetherness and their differences" (Miller 2008, 55). Put differently, the abstract notion of couple is made tangible through material objects. As Miller (*Ibid.*, 157) further argues: "Typically, one can watch couples developing their relationship vicariously, through the gradual merger of all sorts of items in the house."

Pia, in particular, was still on the road between her childhood home and her current home: she talked about technology-related issues through her parents. In addition, she even called her parents' house her "home" at the same time as referring to her

current apartment with Valtteri as home. Interestingly, Pia associated technology mostly with noise, and she wondered how her preference towards a silent domestic realm might have originated in her childhood home:

I don't know, maybe it's because there was always someone listening to something at home. My dad is a musician, and he always listened to everything very loudly, everything in the television and the radio. He was also noisy otherwise, singing or something. Maybe it's because of that that I want to be in silence these days.

According to Pia, it was her father who had affected her attitude toward technologies. Knowing what it was to live in a noisy household, she had chosen to act differently and spent her free-time in silence, declining to use the radio and the television like her father had done. Choosing to behave differently, one could also call it some kind of rebellion against parents, is an important phase in the development of one's identity and ways of living. As Pia has done, it is focal to see oneself as an individual who is different from her/his parents and capable of "defin[ing] one's own future" (Kaufmann 1998, 28), which may (or may not³³) be different from the childhood home.

The role of parents is also crucial when defining technology-related gender roles in the home. In Pia's interview, she told me how she perceived cooking and kitchen appliances as feminine because her mother was the one who did the cooking. In addition, her mother was responsible for the laundry, and Pia saw her current role of washing the laundry as related to her mother's similar position. In this case, Pia also rebelled, although in a minor manner, against her childhood home. She admitted that she had to do the laundry, because "otherwise the dirty clothes just continue to pile up". However, there was one thing that she refused to wash, and that was Valtteri's training and performing gear. Pia did not want to touch them because they "smell so bad". Consequently, she washed the laundry like her mother, but she did it on her own terms and was thus able to sustain her own identity and agency.

³³ Kaufmann (1989, see also Silva 2010 about the UK) points out that rebellion against one's parents and learned ways of pursuing domestic tasks is very much class-related, at least in France. He argues that rejection of traditional domestic roles is visible particularly within "the better educated ones" (*Ibid.*, 28); and "Gender roles are still common among the less well off, particularly among manual workers." (*Ibid.*, 41)

In addition, Pia expressed her equality in terms of Valtteri by stating that she normally vacuumed in the household, but she continued that "I usually force Valtteri to vacuum the trickiest area, that is the living room." Regarding cooking, a task that had been a female chore in Pia's childhood home, she continued to point out her deviant role. She admitted that she was not that good at cooking, and it was usually Valtteri who prepared the meals in their joint household. Pia's rather nonchalant attitude toward cooking was complemented with Valtteri's interests as he had adopted a passion for food from his father. In his interview, he explained why he cooked and was more enthusiastic about kitchen appliances than Pia:

I like it [cooking]. I like it a lot. I don't like to search for recipes in the cookery books, I just plan approximately what I will use, and then create it into a meal. It is a creative process, some way. When I was younger, my dad visited New Mexico in business, and then we both got enthusiastic about chili and Tex Mex foods. Currently, I have broadened my passion for Thai foods and for other ethnic realms. I like to experiment different things with food, mix different cultures and qualities. I really like it.

Cooking was the domain where Valtteri and Pia had easily found the complementarity in their relationship because of their compatible likes and dislikes. As Pia had inherited some of her behaviour from her childhood home, Valtteri had inherited his cooking skills from his father. According to the previous excerpt, Valtteri did not consider cooking a chore but a part of his identity, and he felt himself a creative artist while cooking. The emphasis on cooking as a form of art was a masculine feature also in other households where the male partner reported doing most of the cooking. On the contrary, no one considered, for example, washing laundry or vacuuming creative tasks. This may be related to Gray's (1992, 71) notion of identifying different tasks. As she (*Ibid.*) claims: "When the task becomes identified as a male task, it has higher visibility and value." In addition, Silva (2010, 89; 94) points out that "more men cook for display than as a matter of routine". Irrespective of the fact that cooking is no longer solely a female activity in Western Europe (Cheng et al. 2007, Gershuny et al. 2006), it seems that men's cooking activities are still emphasised and valued higher than those of women.

Children

Parents were most visibly present in technology-related issues in the accounts of the youngest interviewees, but references to children were not related to the age of the respondents. As I anticipated, children were important to the interviewees who at the time of the interview had children living in the home, but they proved to be equally important to the elderly informants although in a slightly different manner.

The 38-year old Juhani and 42-year-old Miia were a couple with one daughter, who was 9 years old when the interview was taken. Given all the public concern and media warnings about children's addiction to computers and about possible Internet paedophiles, Juhani and Miia were concerned about how to introduce their daughter to technologies. However, technologies also offered them family fun. This opposition between threat and enjoyment largely affected the categorisation process of domestic appliances. Giving meanings to technologies through children was not gender-related in my data, and fathers and mothers were equally voicing their thoughts about technology-related issues that affect their children. To begin with, Juhani described his fatherhood to me in terms of the television:

Sure it affects our social relationships that we watch telly together. It's really important, at least to our daughter. When it's Friday and they broadcast "You've Been Framed", then we create the right atmosphere and make some snacks. You could say it's an official start of the weekend for all of us. It affects us in a positive way. Nevertheless, of course there are things that are inconvenient. For example, when you try to instruct your child over the telephone how to use the television and the digibox. It is so challenging!

Juhani expressed here his role as a father and his inclination to invest in his family. He had adopted the role of a technology provider and counsellor, and as he stated in the extract above, he even served as a technology adviser via the telephone. Furthermore, he acknowledged his child's needs and wanted to respect them by admitting that watching the television together was really important "at least to our daughter". In other words, watching "You've Been Framed" together might be less significant to Juhani, but since he had noticed how important it was for his child, he wanted to make an effort every Friday.

As well as giving his daughter joyful experiences that were mediated by technology, Juhani emphasised his position in determining what kind of technology and related actions were suitable for her. Later in the interview, he told me what he had planned to do with his X-Box game console:

I have been thinking of giving it to my daughter when she is older, given that they design some games suitable for children. I had that in my mind when I bought that console, but it seems that there are very few games like that. At Play Station you can find more games that would be good for her, educational ones, you know. Nowadays we play games together at the computer. I think it'll suit her for a couple of years to come, but I think she'll eventually get interested in her own social games where she doesn't need her Dad's help.

Also, in comparison to other couples with small children, the culturally normative role of the parent is to prevent and guide children with their use of technologies: all of the mothers and fathers voiced and highlighted this responsible position in their talk. Once parents teach their children the right and wrong ways of using technological devices and adopt this responsible and restrictive role, they simultaneously convey their ideas of the world: what they consider good and bad, and how to manage different situations and objects. Interestingly, in Miia's case this was expressed very explicitly. She told me that when their daughter had asked for her own computer and television, her wishes were not granted. However, when she had asked for her own audio system, she received it immediately because "[y]ou have to listen to music. Otherwise you go mad". Music and audio systems are, thus, considered less harmful to children than computers and televisions, which, as indicated earlier, are viewed more warily.

Furthermore, having children changed the ways people ascribed meanings to domestic appliances. The time before the children was usually depicted through entertainment: the biggest issue in terms of technologies seemed to be whether to acquire a bigger television and/or a better stereo system. With the children, the responsibility grew and the interviewees started to think about and use the devices differently. For example, the 34-year-old Minna revealed that whereas earlier the stereo system had been very important to her, the washing machine was at the moment much more essential "just because of the size of our family". Also, Minna's husband Kari said that listening to music was not the same as it used to be, because "you cannot listen to music so loudly anymore, and you don't even want to, as your

life at home is so noisy because of the children". Life was no longer about entertaining oneself, but the roles of provider, housekeeper, and educator had entered the identities of these parents.

Although everybody in my data, with or without children, acknowledged the essential role of such basic domestic appliances as the washing machine, the refrigerator, and the stove, they seemed even more important in families with children. Especially mothers who did more of these basic chores expressed their gratitude for washing machines and dishwashers.

Having children not only affected the importance of entertainment and other household gadgets, but also the methods and objects of communication. Juhani's explanation below of how he and Miia acquired their first mobile telephone could be seen as a material example of their commitment to becoming parents. In Juhani's words:

When we bought our first mobile phone, we had thought over for a long time whether we could afford it. It was really heavy and big, and it was hard to carry. We decided to buy it anyway, because Miia was pregnant and I wanted to carry it with me in case something happened. (...) It's an exciting memory. Very personal and close to me at the same time.

Purchasing the mobile phone was obviously a practical solution: Juhani could be reached at any time. However, I argue that it could also be interpreted as a material, technological proof of the pregnancy. If Miia had not been pregnant, they would not have bought the phone in the first place. Moreover, this material object was still vivid and present in his mind since Juhani mentioned that he associated it with Miia's pregnancy and the exciting time of expecting the baby. As I will further elaborate in the following analytical chapter (chapter 6), technology may, alongside its practical and social functions, serve as a mediator of memories, and sometimes it is easier to talk about difficult issues through some material object.

A different way of referring to one's children when sorting out and giving meanings to domestic technologies was when the elderly talked about their grown-up children and grandchildren. In the previous families with small children, the relationship with technology was filled with concerns and responsibility, but on the other hand, also with enjoyment and spending time together. In contrast, the older respondents'

relationship with technology to a large extent involved the assistance and counselling that was provided by their offspring. For example, the 79-year-old Helmi explained in her interview how one of her grandchildren set summer and winter time on her VHS player. In another part of the interview, she also revealed that her use and acquisition of the mobile phone had been dependent on her grown-up daughter:

A: My daughter and son-in-law taught me how to use that mobile, and they installed it in a way that I can phone people by using only one number. It's very easy like that. But I have also dialled with proper phone numbers, too, not just to people who are put in a speed dial. I like to phone people with my mobile. I make almost all my phone calls with the mobile.

Q: Have you thought of replacing that with a newer model?

A: Yes, and I have the newer one already. I got it from my other daughter.

Q: Oh, really? You have not taken it into use?

A: No, because no one has had time to put my phone numbers in it. My daughter does that for me. I will show that new phone to you, I will be back in a minute. (The interviewee goes to get her second mobile and comes back).

Q: So, you were saying that the numbers should be put into the phone...

A: Yes, yes. I don't know how to do that myself. My daughter has promised to do that. However, she said that you can use that old phone until it breaks because you like it so much, and I have recently bought a new battery for the old one. Yes, I have liked this one. This is very explicit to use. Numbers are bigger and more distinctive in this one.

As Helmi described in the extract above, her introduction to novel technologies to a large extent relied on her children and grandchildren, but with their help she was able to keep up with technical developments. If her explanation is compared with the previous couples and their children, it seems that the situation in an odd way is the same, only the responsible and educative roles have now been reversed. The purchase and use of technology reflect the cycle of life: the parents teach and restrict the technology relations of their children, but it is the grown-up children who keep their elderly parents updated and technically competent.

Another elderly respondent, the 76-year-old Toivo, talked about his children in terms of technologies. Similar to Helmi, he liked his mobile phone and considered it very important in keeping in touch with the children and other relatives. Interestingly, he

was also interested in computers and wondered why he had not acquired and learned to use one:

My children have computers, and when they started to appear in their households, I said to them that I was going to buy one for myself. My son told me then that "you don't need it, what would you do with it"? Consequently, I didn't buy it. I have thought about the purchase after that, but then again, I think that I can get the information I want also from the television, radio, and newspapers. When I need to pay my bills, they are mostly in a direct debit, or I use my mobile to pay them.

This excerpt from Toivo's interview directs attention to the extent the elderly trust their children's views on their needs and abilities. As Toivo explained, the reason for his withdrawal from buying a computer was his son who believed that Toivo "doesn't need it". However, what that need meant was not revealed in the interview. Since Toivo did not know much about computers, I believe he at that moment was not fully aware of all of the functions that computers offer, and his son did not tell him about these possibilities either. Given the fact that he paid his bills with the mobile phone, it could be assumed that he was still competent enough with technologies, and to my understanding, using the computer would not have been a problem for him.

As I stated earlier, the elderly have become the dependants in technology-related issues, and it could be argued that their agency is to some extent defined by their offspring. However, the elderly interviewees pointed out how they still managed to retain some sense of agency, as they also reported how they had pursued some actions without the help of their children. Helmi, for example, emphasised how she had not only used the speed dial option, but also sometimes phoned people by dialling their whole phone number. Despite admitting being reliant on her children, it was clearly important to her that she was able to pursue things independently. Furthermore, Toivo said that although his son had shown a negative attitude toward his interest in computers, Toivo had still continued to contemplate whether to buy one or not. The final rationale behind his decision for not to buy the computer was, according to him, that he could find the information he needed in other sources. Accordingly, he succeeded in showing that after all it was his own decision, and not everything depended on his son.

Friends

In addition to the pivotal role of parents and children, friends were central when giving meanings to and defining the right and wrong places of technology. The most obvious role for friends was to offer recommendations and evaluations, and friends were usually the ones whose opinions were considered valuable when planning to purchase a new device. For example, the 42-year-old Miia described the congruent interests of herself and her female friends and explained how the combined washing machine and dryer was acquired:

Q: Do you compare devices before the purchase?

A: Well, I read information about different qualities from the advertisements, and I asked my friend who had recently acquired one for herself. These are the subjects we talk about with my girlfriends. How many rounds of spin-drying you should have, and so on (laughs).

In addition to mentioning the role of her friends as providing information, Miia ironically refers to "girlfriends" and to the mundane subjects their conversations cover. This could be a Finnish version of "Sex and the City", the hugely popular television series that followed four female friends in New York City. Whereas Carrie, Miranda, Charlotte, and Samantha spend their joint time discussing shoes, men, and sex, their Finnish counterparts talk about the qualities of washing machines. This reference to friends as suppliers of expert information was a feminine feature. The male interviewees also tended to speak about other people, but if the object were the washing machine, they would usually refer to explicit experts such as repairmen, not close friends. As pointed out earlier, men's enthusiasm was commonly directed toward entertainment technologies, and the review process regarding these devices was described as a more personal one and pursued mainly by reading expert magazines (TM, *Tekniikan Maailma*³⁴) and advertisements. Basic domestic technologies, although they might be novel and innovative, were not the ones the male respondents considered interesting. As the 38-year-old Kari admitted: "I never watch the ads like 'wow, what a washing machine, or a refrigerator!' They're quite unimportant; they're just devices that are used. It's the entertainment technology that

³⁴ *Tekniikan Maailma*, "The World of Technology", is a popular Finnish magazine addressing all kinds of issues concerning technologies from cars and mobile phones to stereos and television sets. In addition to introducing new advances in technology, it also offers reviews of different devices.

appeals to my emotions (laughs)." This attitude was also visible when couples described the purchasing processes in their household. Gadgets in entertainment technology were more often bought solely by the male partner, but basic domestic technologies were discussed and acquired together.

However, friends were not always considered giving expert opinions or serving as peer support, but sometimes their role was to serve as the point of contrast, as someone that the interviewee wanted to distinguish her/himself from. Women's contradictory attitude toward the television was also visible in this case as some of the female interviewees criticised their friends' ways of using the television. As discussed earlier, the television is a device that should not be centrally located in the room, should not determine the actions and behaviour of people and should not inhibit sociality. In her interview, Minna, the mother of two, continued to emphasise the far too central role of the television in people's households, and she promoted her own ways of television viewing:

Television is not on in our household unless we really watch it. (...) We don't use it as background music. There might be a programme on that is not suitable for children, for example. I have noticed that even in my own circle of friends, the television is on all the time, and they watch everything shown on it. I don't have time for that at all.

Minna's normative statement highlights the secondary role of entertainment technologies, and she justified her view with her experiences of her friends, the ones whose behaviour she saw as unethical and whom she considered different from her. A similar point was made by the 52-year-old Matti who criticised his friends' inability to control and guide their children using computers: "I have friends with children of a certain age, and I have said to them that you have to restrict the time your child spends at the computer. I don't oppose computers as such. I can understand that it can be someone's hobby. But there is always a danger of addiction." To reiterate, Matti expressed his own responsible attitude toward technologies through less responsible others. As can be seen in Minna's excerpt, introducing children – those who cannot yet be seen as responsible for their actions and who need to be taught how to live their life in the right way – is an effective and culturally justified way to express one's ethical attitude.

As in the first analytical chapter (chapter 4), it was frequent to refer to the common stereotypes that are associated with certain (usually deviant) behaviour and devices. I argue that referring to one's friends is an even more effective way to express one's responsibility and reflective attitude. Friends are, after all, usually people whom we have purposely chosen to be close to us. They are not some casual acquaintances, imagined stereotypes, or relatives we cannot select, but people that we have judged suitable enough to enter our lives. On the other hand, friends were seen as credible sources of information, and their experiences were taken into account when planning and reviewing new technology purchases.

5.4 Chapter Summary

This chapter has addressed technological objects and their role in social relationships. In the words of Gregson et al. (2009, 258; see also Douglas and Isherwood 1996, 59 and Silva 2010): "[C]onsumer objects are both the medium and the means through which social relations (...) are worked out, indeed performed."

As we could see in the case of Riitta and Antti, the couple who expressed complementarity in their relationship, the balanced technology-mediated relationship has to succeed in all of the issues that concern domestic technologies in the home: their purchasing, using, and locating. Technologies are part of the system, that is, the domestic unity that the interviewees actively attempted to form in the interviews. By categorising and organising technical objects and family members of the home, people try to make the sense of their domestic life, their selves, as well as the couple and the family they form. Mary Douglas (2002) argues that dirt is always cultural and "no single item is dirty apart from a particular system of classification in which it does not fit" (Douglas 2002, xvii). Dirt is, for Douglas, an allegory for something that does not fit in the classification. Further, classification is a process that ideally creates an understandable unity of things and people. As argued, also technology (and technology-related actions pursued by family members) is something that should fit into this unity. If it does not fit, it becomes, in Douglas's vocabulary, dirty, and people perform different strategies in order to put it in its right place.

I analysed the categorisation of people in terms of domestic devices: first, I showed how the interviewees form a couple by describing their conjugal and individual behaviour, values and beliefs. This was done by classifying what is right and wrong, who uses what and how, and where it should be used and located. When all these issues find their place in the imagined unity, then the couple could be said to express complementarity, and the couple becomes officially formed in regard to domestic appliances. I have also tried to show that defining and aiming for complementarity is always a project in progress and stability is achieved only at a momentary basis. As Silva (2010, 157) remarks, there is no shared "moral economy of the household" (Silverstone et al. 1992), but "different moral views often conflict and are negotiated", and these moral views are deeply connected with technologies and everyday practices governing their use³⁵. Silva's (*Ibid.*, 159) analysis and arguments are similar to my analysis, as she also states that "in family relationships people are dependent, have complementary abilities and are interdependent". As I showed with the example of Kaija and Tuure, the balance is not guaranteed even with decades of partnership. Putting the objects and people in their right places may be a painfully slow procedure that never seems to be realised in practice. Furthermore, forming the balance is normatively considered a shared project that both partners should commit themselves to. Commitment may be demonstrated at a practical level, for example, by pursuing certain domestic chores, but sometimes it is enough to acknowledge the partner's efforts discursively.

In addition to the importance of partners in giving meanings to technologies, the past, present, and future define people's relationship with technologies. Parents remind us from the past and may be crucial when we try to form our own ways of living with domestic appliances. As Pia's interview proved, parents set an example to which children compare their later behaviour and which can sometimes be rejected in order to find one's own identity and ways to pursue technology-related values and activities. Proceeding with the cycle of life, I also found that if couples have children,

³⁵ However, the view of "the moral economy of the household" might be practical if it were used to refer to the analytical ideal types. In other words, in some cases it might offer the analytical clarity of the phenomenon in question, but I argue that it should not be used to directly refer to the lived, actual world.

their technology-relations change, and they adopt different roles and attitudes toward devices when they realise their behaviour affects their children's life. Obviously, responsibility – defining what is bad and what is good for your child – becomes one of the main features in terms the parents' relationship with technologies. On the other hand, domestic appliances also occasionally provided joint fun and enhanced social relationships and integration of the family. Further, I pointed out a case where a technological object, the mobile phone, marked the couple's new orientation toward parenthood: this material thing embodied their intensive emotions about this new phase of life. When the elderly were analysed, it could be seen how people who had once been the parents and guides had in this later part of their life become the ones who were counselled – and even restricted. The grown-up children played a great part in introducing novel technologies and their use to their elderly parents. Often, the elderly parents to a quite large extent depended upon their children and their assessment of their parents' needs and capabilities in terms of technologies.

Also, friends were found to be important actors when giving meanings to technologies. Friends were considered, for example, those whose judgement and experiences of different domestic appliances were taken into account when planning future purchases. In some cases, it could be seen that friends were used for determining what is wrong and what is right, and they were referred to when the interviewee distinguished her/himself from them and expressed reflexive and normative thoughts about certain devices and behaviour.

In all of the cases where the interviewees referred to other people, one of the main nominators was the expression of agency and seeing oneself as a capable individual, not as someone who is dependent on others. Within a couple, there is a need to retain a sense of individuality, that is, make one's own decisions. However, aiming for a balance also demands reciprocity so that one's efforts are acknowledged, with a counter-gift when needed. In terms of parents as significant others, the agency was most visible when the interviewee tried to establish his/her own ways of doing things. In addition, the elderly interviewees who were keen to refer to their grown-up children managed to sustain their agency by reporting how they had pursued some things independently, without their children. Friends were quite commonly considered people who are somewhat similar to the interviewee, and especially the

female respondents conferred with their friends in technology-related issues. However, in some cases, friends were used to mark the difference and ethicality of the interviewee, and they were adverted to when a respondent wanted to highlight her/his own values.

Surprisingly, gender was hardly present in the interviewees' accounts on technologies and significant others, but nevertheless, it could be said that women's role seemed to be an anchor for reality, while men were more attached to the virtual world and conveyed the traditional social identity of a male who is largely interested in entertainment appliances, such as the television and stereo system (see also Aaltojärvi 2012). On the contrary, women's accounts on entertainment technologies were strikingly critical: they commonly reported that their role in purchasing entertainment technology was either to restrict their partner or give him instructions on how the gadget should look like in order not to spoil the décor and atmosphere of the home. When basic domestic devices, such as washing machines, were concerned, women started to express expertness and were able to talk fluently about the technical features and performance of the gadget in question, issues that most of the male interviewees did not find interesting at all. Furthermore, many of the female interviewees seemed to have decided before the interview that they were going to "fail" in the interview because they "don't know anything about technology". However, when the interviews progressed, it became clear that these women's belief in their lacking technological abilities was some sort of social disillusion because they were perfectly competent with technologies they used in their everyday life. It was concluded that this kind of female underestimation of domestic competence was due to their role in the relationship in which the male acted as the technology provider and counsellor. This did not necessarily imply unequal gender relations in the family: it might be that these women deliberately left technological purchasing decisions and all the related actions to their partners. In other words, the female interviewees did not have to take care of technological issues by themselves because the male of the family was happy to use his consumer competence regarding technical issues.

As early as 1985, Cockburn remarks that "[a]mong the have and have-nots of technical competence, women and men are unevenly represented. (...) The technical competence that men as a sex possess and women as a sex lack is an extension of the physical domination of women by men". This is quite a striking result given the

year when I gathered my data (2006-2007, over twenty years after Cockburn) and the fact that women still perform more domestic duties than men (for example Aalto & Varjonen 2004, Pääkkönen 2005). This means that women must be able to use domestic devices and therefore have at least some kind of technical competence, but this still goes unnoticed by both men and women. For some reason, technical competence is usually connected with entertainment technologies that seemed particularly interesting to the male interviewees of the data.

However, it has to be emphasised that such traditional gender roles were not the only feature in the interviews, and there were people (and objects) that broke the classic distinction between men and entertainment technologies, and men and technical competence. For example, computers were considered surprisingly feminine (or at least gender neutral) in my interview data. Many of the men who reported being "technology enthusiasts" admitted that they were not experts in computing and that their home computer was mainly used and mastered by their female partners. Further, cooking was in many households seen as masculine, and surprisingly many of the male interviewees expressed quite passionate views on food. Again, aesthetic issues in technologies did not belong only to the female respondents, given that many men openly declared their interest in home decoration, and one of the most passionate design/aesthetics people in the data was male.

In addition, my aim in the chapter has been to show that technological gadgets do not just enter the home and are rationally used until they break or are otherwise replaced or discarded. The relationship with an object starts a long time before the object enters the home: people read ads and magazines, ponder qualities, requirements, and home decoration, calculate money, and negotiate with family members and friends. When the object is brought into the home, it should find its right place so that it does not damage the domestic atmosphere and social relationships. In many cases, this means a long wander for the device, and many discussions, even fierce ones, within the family. If the situation in the home changes, it could mean that the gadget is no longer needed, and it has to move once again: it can be given away or sold to a neighbour, friend, or relative, or sometimes it can be carried into the garage among other deserted technologies, or simply pushed to the back corner of the cupboard. Whatever the case, the object is there to be found and its life trajectory may be given another start later on.

5.5 Discussion

As mentioned in the analysis, couples and their negotiations in terms of domestic appliances could be discussed from the perspective of the gift. Couples – whether they have children or not – form a domestic unit that could be called a micro-level community. Gift is something that binds together the community and gift-giving is used to strengthen and sustain the bonds between the members of the community (Mauss 1990, Komter 2005). Solidarity governs communities and gift-giving, as it can be seen "to combine parts to form a strong whole" (Komter 2005, 1). Komter (*Ibid.*, 3) writes that gift-giving is an inevitable act in societies, and "[i]t is impossible to think of a society without gifts being circulated: gifts still create and maintain social bonds, thereby continually contributing to the revitalization of society". By the same token, gifts; giving and returning them, contribute to being a couple and a family. If the gift is not some way returned and the imbalance accumulates for years, the whole relationship and therefore the family will be threatened. As Mauss (1990) points out, gift-giving involves three kinds of obligations: giving, receiving, and reciprocating.

Gift always involves reciprocity, at least at some level. As Komter & Schans (2008, 279) write:

The idea that reciprocity is the basic principle underlying forms of social organization, among which the family, is as old as classical anthropology and sociology. The essence of the principle is that giving prompts receiving, thereby creating forms of ongoing exchange and durable cooperation.

Completely altruistic gifts are scarce, and it has been stated that they belong mostly to the very close kin relationships (Sahlins 1972). However, Komte & Schans (2008, 280) remark that "factors like age, partner status, proximity, but also cultural norms and values are likely to affect the type of reciprocity". For example, it is an entirely different thing to receive a gift from a distant relative or from one's long-time partner. Furthermore, it is common that parents give gifts to their children, but children are not obligated to return the gift. In this analysis, the givers and takers are partners so the proximity is very close and both parties are, so to speak, at the same level.

In the analysis, the reciprocity was seen in the interviewees' accounts that were used to illustrate their own and their partners' actions with regard to domestic appliances. In a nutshell, they attempted to balance the actions in such manner that if one family member did something, another one would then do something else, or would at least somehow acknowledge and appreciate the action. At its best, this furthered an organic and functioning family unit and expressed balanced couplehood. As Frow (1997, 124) maintains: "Gifts are precisely not objects at all, but transactions and social relations." As we saw in the case of Antti and Riitta, both did their share and reciprocity was clearly visible in their accounts of their domestic life; both gave gifts and returned gifts, and this way they both collaborated to consolidate their domestic unit of social relations. At this point, it is important to notice that the gift can also be immaterial and a verbal positive note or a hug, for example, count as a gift or as a counter-gift.

Not all the respondents demonstrated this kind of balance and some couples could be seen to lack the reciprocity that is relevant in the gift-giving. Within some couples, the domestic life seemed to be a constant struggle of giving and receiving. Finch (1989), among others, points out that helping a family member is considered a moral obligation, and this is something that is seen in the case of the balanced reciprocity. This was most visible in the case of household tasks, and especially some female interviewees expressed their discontentment doing most of the household labour. The researchers have detected in many studies that women pursue most of giving gifts and practices involved in it, for instance, searching for the suitable gift, buying the gift, and wrapping the gift (see, for example, Caplow 1982, Di Leonardo 1987, Fischer & Arnold 1990, Komter 2005, McGrath 1995, Mortelmans & Sinardet 2004a). As argued, gift-giving can be checked against the domestic division of labour. In both cases, the reciprocity and balance is appreciated and stipulated, and the act/gift may also be immaterial. If the gift is not returned in some form, the debt will start to accumulate, and this endangers the relationship between the partners. Naturally, sometimes the gift, for instance cooking a surprise dinner for the partner, may be given just to make the partner happy, and the action could be seen as completely altruistic. However, these can be treated as single examples, and it is the whole that matters. In the words of Komter (2007, 104): "Human beings are both generous and calculative, sometimes even both at the same time."

In the sociological research of the gift, it has also been discovered that forms of the gift-giving change over the course of life (Antonucci & Jackson 1989;1990). According to the data of this research, the most challenging time seemed to be when the children of the family were young and both members of the couple were in paid work. In such cases, the female partner would be the most likely one to criticise the amount of domestic duties and her role regarding them. Hochschild (1989) writes about women's "second shift" where the full-time job is combined with a large share of household duties. It can be argued that pursuing household chores is giving one's time to the other: when the time is scarce, as in the fast-paced life with children, housework and paid work, household practices are an important gift to one's partner and to the whole family unit. Understandably, the giver of the gift hopes that this time-consuming and effort-demanding gift is somehow returned; if not in the form of housework, but at least verbally acknowledged. As mentioned, time seems to be at the core of this phenomenon. If the giver of the gift has plenty of time, she/he will not necessarily demand or expect the balanced returning of the gift. When the gift is pursued in the situation where time is a precious commodity, the balance in the family becomes more important and at the same time difficult to accomplish. As the young children are not expected to return the time-consuming gift, it is the partner who is expected to do her/his share. In the same vein, it has been stated that spousal relation is the most valuable relation in the gift-giving and it determines the "emotional value of a relationship" (Mortelmans & Sinardet 2004b, 178). This means that if gifts are received and returned in the so-called balanced manner, it will also enhance the emotional balance of the relationship between the spouses.

Naturally, the situation in one's life and one's relationship with time are not the only aspects affecting the ways the domestic life and the distribution of household tasks (and giving and receiving the gifts) are arranged. These dispositions are also largely influenced by the cultural and societal norms of gender. Once again, this goes hand in hand with the theories of the gift. As Mortelmans & Sinardet (2004b, 177) state: "Gift relations tell us more about power relations and dependencies between people, opinions on gender and division of roles between men and women, etcetera." What follows is that the younger respondents seemed to expect more from each other and the female party of the couple was not expected to pursue all the domestic chores alone. However, although norms and cultural climate change, practices seem harder to change, and this is likely to cause difficulties in people's domestic lives. Sometimes

practices and cultural values connected with these practices do not meet: active and on-going negotiations are necessary within the family so that the family's own balance, which is suitable for all the members of that domestic unit, can be reached.

6 Emotions and Domestic Technology

Another lonely night
Another lonely night
Stare at the TV screen
Stare at the TV screen
I don't know what to do
Don't know what to do
I need a rendezvous
I need a rendezvous

Computer love
Computer love
Computer love
Computer love

(Kraftwerk: Computer Love)

This chapter moves away from the issue of clear purification presented in the first analytical chapter and focuses on emotions related to technology. More in line with chapter 5 about social relationships and domestic appliances, emotions can be regarded as the most extreme form of sociality and contradicting the idea of lucid purification in which technical devices are categorised as mere rational tools. However, emotions and purification are not strictly opposite to each other. Rather, they are part of the same continuum but situated at the opposite ends. In other words, emotions mingle with purification and vice versa.

In material culture studies, emotions are almost completely neglected³⁶, and I combine concepts and ideas from material culture studies with sociological accounts

³⁶ The only exception is Tisseron (1999), shortly reviewed by Tim Dant (2005, 62-65). The lack of emotions has also been detected in research on technology. As Pantzar (1996, 122) mentioned as early as 1996: "Research on technology also needs views on emotions and experiences. Designers of technology, entrepreneurs and early adopters have been, and will be, affected by noble emotions and experiences, as well as rational deliberation."

on emotions. In practice, emotional accounts in terms of domestic appliances were usually offered in forms of memories and narratives. I will return to this aspect in later on in this chapter.

The topic of emotions has been of interest in some studies on consumer culture (for example Baudrillard 1998, Belk et al. 2003, Campbell 1987, Illouz 2009), but they have chiefly focused on “desires” and the motivations consumers attach to the process of consuming. As Illouz (2009, 379) sums up the main question: “Emotions are an essential, albeit insufficiently acknowledged mechanism explaining how consumer needs and desires connect to the system of production of wants.” In addition, emotions have been addressed in consumer culture studies through advertising, and researchers have shown that “in advertising, material objects are suffused with semiotic codes that in turn carry emotional meanings” (*Ibid.*, 380). Further, there is some research on emotions that is linked to aesthetics in consuming (Venkatesh & Meamber 2008). In this chapter, however, I concentrate on the verbal accounts that the respondents provided about emotions. Although they might include references to “desires”, I do not concentrate on the “wants” as I approach emotions more from the basis of social relationships and the practical use of technical objects.

Emotions and technologies are an important research endeavour given the fact that they are currently popular in the field of human-computer interaction (HCI), and the role of emotions in computing is acknowledged as a crucial factor when designing future technologies³⁷ (for example Desmet 2003, Hudlicka 2003, Nass & Moon 2000, Picard 2000;2003, Picard and Wexelblat 2002, Zhang & Li 2005). However, these studies are mainly psychological in nature³⁸, and one of the most popular ways to address emotions in this field is through physical measuring or with ready-set categories assuming that emotions are delineable and can be clearly defined (Boehner et al. 2007. See chapter 7 for a wider analysis of emotions in HCI). Instead, the

³⁷ “Affective computing” is a term commonly referring to emotions and computing in HCI. “Funology” has also been used to refer to engaging and fun computer-based products eliciting solely positive emotions (Blythe et al. 2004).

³⁸ The only exception in this cluster is Boehner et al. (2007), which I will discuss in chapter 7.

starting point in this chapter is that emotions are not only physical but also social and cultural, and they are mediated, sustained and recalled with the help of material objects – domestic appliances in this case. I believe that this kind of knowledge could be used in the design of future technologies and HCI would be the one of the main beneficiaries of this analysis.

Extending the previous chapter's topic of the role of technologies in social relationships, my goal here is to show that technologies are affective material objects and not just tools that are used rationally. Emotions are quite often considered contradictory to rationality and functionality, and it is common to distinguish between emotion and reason (Barbalet 2002, 1). However, sociological accounts on emotions are able to illustrate that emotions are deeply connected with action and can link a structure and an agency. Barbalet (*Ibid.*, 1; 3) explains this claim by writing:

All actions, and indeed reason itself, require appropriate facilitating emotions if successful actions or reason at all are to be achieved. How could a person deal competently with any practical problem without the emotion of confidence in their actions, without the emotion of trust in the acts of enabling others, without the feeling of dissatisfaction with failure to encourage success, without the envy of competitors to spur the pursuit of interests, and so on.

(...) [E]motions point to problems a person faces, and they delimit a set of likely solutions. And they do this practically instantaneously. Not only do emotions provide instant evaluation of circumstance, they also influence the disposition of the person for a response to those circumstances.

Accordingly, emotions are always present when there are human beings and human activity, and there is no such thing as purely rational and functional action. It is, of course, possible that the goal is considered only rational, but the action itself that is pursued to achieve that goal is never only rational but also involves emotions. As I will show in this chapter, emotions are present when a person acts with technology, and it is through the discursive balance between frustration and joy that emotions are explained at this functional level.

In addition, Boden & Williams (2002) claim that rationality and emotion are not exclusive. As they (*Ibid.*, 498) write: "Emotions become 'things' to be managed or monitored, manipulated or manufactured – labourers put to work according to the latest rational imperatives or market dictates of late/postmodernity." Accordingly,

emotions do not necessarily have power over us, but we are also able to manipulate and control them in terms of a current situation and/or what is culturally desirable. In this sense, we can all be described as "emotion managers" (*Ibid.*, 499). Arlie Hochschild (1979;2012) calls this kind of action, that is, suppressing or increasing of the emotion to attain a desired emotional state, "feeling management" that is guided by the culture's "feeling rules". I will return to this theory in the summary of this chapter. Further, Hochschild (2012, 17) points out that "emotion communicates information". This is an important notion as emotions can be seen as a part of seeing and understanding the surrounding world. In this sense, emotions further rational action and meaning-making. As Hochschild (*Ibid.*) puts it: "From feeling we discover our own viewpoint of the world."

Furthermore, emotions are not just physiological, biological reactions to an outer (or inner) stimulus, but they are relational and social. To begin with, emotions may be collective as "persons sharing common structural circumstances might experience common emotions" (Barbalet 2002, 4). For example, getting married or losing a close family member are situations that evoke similar feelings in different people. Second, it has been stated that emotions are deeply rooted in a certain culture and they change historically. For instance, love has been scrutinised by sociologists, and it is commonly argued that the rise of the romantic love is connected to a modern society (see Jackson 1993 for a review of sociological love). Boehner et al. (2007, 279) write that there are two main forms of interpreting emotion as cultural. In a weak form, it is assumed that "emotions have different meanings and valences in different cultural groups". The strong form, however, postulates that emotions are not just interpreted culturally, but they are "produced culturally". To illustrate, Boehner et al. (*Ibid.*) explain that "[t]o experience a feeling as, say, anger, love, happiness, lust, or frustration, one must be grounded in a cultural context that makes anger, love, happiness, lust, or frustration meaningful". What matters here is that "emotion is an interpretative and interactional product" (*Ibid.*, 280). In other words, emotions can be experienced only in a cultural context and they are deciphered to suit this cultural framework. Further, emotions are produced when interacting with someone and this someone may be a human or an object.

To emphasise the sociality and relationality of emotions, Burkitt (2002) contemplates the difference between feelings and emotions. In this analysis, I follow his definition

of emotions that crystallises in the analytical separation between doing/feeling and talking. Burkitt (2002, 153-155) argues that feeling is something that actualises in practical consciousness at a moment we are pursuing something and we cannot actually yet articulate and explicate what we are feeling. Emotions are subsequent to feelings as they emerge in "discursive consciousness and involves the way we articulate these feelings" (*Ibid.*, 154). Accordingly, Burkitt conceives emotions as discursive statements that are explicated by reflecting feelings that have been experienced. As he clarifies: "Feeling is not expressed but completed in the word as emotion. (...) [I]t becomes like an object that can be reflected upon." (*Ibid.*, 155) Following Burkitt's description, my analysis in this chapter focuses on explicated emotions related to technical devices and the ways the interviewees articulate their feelings that become emotions in the interview process. However, even though emotions are expressed discursively, this does not mean that they are only social and cultural, but there is also a physiological element in them. Burkitt (1997, 42) proposes that "emotions are multi-dimensional and cannot be reduced to biology, relations, or discourse alone, but belong to all these dimensions as they are constituted in ongoing relational practices". Put differently, emotions may take physiological forms, but they are still affected by culture and occur in relation to the bodily activity and to a certain context.

Given my subject and interest in material technologies, another noteworthy feature in Burkitt's (2002) theory is his notion of relational bodies and emotions. He claims that "[e]motions only have sense and meaning in the context of relations to other bodies, both human and non-human" (Burkitt 2002, 151). Utilising and following the famous philosopher Spinoza (1677;1993), he argues that emotions (and feelings, for that matter) are expressed in relation to other people, or objects, and there is no need to separate objects and people since both are referred to as "bodies". In this analysis, I argue that technical devices are objects, "relational others", that evoke emotions as people are in various kinds of relationships with them – whether they explicitly acknowledge them or not. Sometimes these normatively purified, so-called "cold" objects, become "warm"³⁹ and filled with social and emotional substance, and

³⁹ Baudrillard (1996) contemplates the counterpole of warm and cold in interior design and argues that "warmth is always contrasted with rigour, organisation, structure, or something of the sort, and that every 'value' is defined by this contrast between two poles". Accordingly, also technologies are given

in some cases they are even treated like humans. In addition, technologies are commonly associated with different emotions, and sometimes emotions are experienced through objects that are used to mediate and sustain feelings from the past.

The emotional significance of domestic objects has been earlier acknowledged and addressed in social studies (for example Csikszentmihalyi & Rochberg-Halton 1981, Miller 2001;2008), but the relationship between technical objects and emotions is much more seldom scrutinised (apart from computers in HCI). In his book, *The Comfort of Things*, Miller (2008) argues that people express themselves through their possessions and "the closer our relationships are with objects, the closer our relationships are with people" (*Ibid.*, 1). In other words, domestic objects are an essential part of us: they are able to tell what we think we are, what we want to show about us to others, and what our relationship is with the outer world. This could be criticised for being a commercial point of view; a shallow reminder of how objects can be used in order to construct desired identities. However, as I will show next, Miller takes his analysis further and manages to express far deeper connections between people and their things.

By observing people's domestic possessions and analysing their discursive life stories, Miller shows that there is an analogue between the respondents' relationship with other people and their relationship with their domestic objects. For example, items may represent the presence of other people, living or dead, and some of them are used as the reminders of the loved and important ones (for example postcards from friends and relatives, inherited jewellery etc.). Further, sometimes an actual object, a laptop in this case, can form the home as well as the social relationships. Miller describes a man whose home and loved ones literally situate in his laptop. The laptop enables him to organise his life and keep up with friends and family, while he has consciously destroyed other meaningful objects in his life. Laptop is, indeed, his home and life. At the time of the interview, the respondent had no home to live in and the only stable address in his life was his e-mail address. Obviously, objects are

meanings to through this juxtaposition and what is considered cold and rational (it is purified) is closely tied with warmth.

not always associated with positive memories, and sometimes a certain item may relate to a loss or bereavement. In addition, a practical managing of objects is a way to handle and recover from unsuccessful relationships. Sometimes, for example, disposing of things may serve as a negative separation from one's parents, or imply the end of a troubled marriage (see also Autonen-Vaaraniemi 2009, 188).

Admittedly, Miller (2008, 195) takes this relation between domestic things and people very far by arguing that "[p]eople who successfully forge meaningful relationships with things are often the same as those who forge meaningful relationships with people". Thus, the empty home could be interpreted as implying a lack of social relationships and experiences in life. As Miller (*Ibid.*, 8) eloquently describes an empty apartment: "There is a violence to such emptiness. (...) There is a loss of shape, discernment and integrity. There is no sense of the person as the other." My interview experiences with people and their technical devices suggest that Miller's quite far-fetched argument may hold true. The objects in the home may in some cases tell their own story of the person's past and present, and occasionally, these objects seem to talk louder than the respondents themselves. In this chapter, I intend to point out that these technical objects commonly considered "cold" may contain large-scale stories of life, and through their reminiscing about technical devices, the interviewees may talk about issues that they would otherwise not reveal about themselves.

Miller takes his theory about domestic objects further by introducing the concept of "aesthetic" whereby he means "overall desire for harmony, order and balance" (Miller 2008, 5). Miller does not use the term aesthetic only at the visual level as it also embodies and expresses people's relationship with their possessions. In addition, the aesthetic at the same time provides comfort to them: it is a material realisation of their self, life, and view of the world. This means that devices and objects are not only present at the functional and the visual level, but they form a part of us as feeling, thinking and acting human beings. Possessing, ordering, and sorting domestic possessions as well as purchasing new ones, outline the basis of a person and provide a feeling of being oneself and having a meaningful life.

Objects are filled with different emotions, which also applies to domestic appliances. In this chapter, I suggest that devices do not evoke feelings only when they are used

(the first part of the chapter), but they are also deeply emotional in other ways and can be used as a means to express difficult emotions and reveal personal things about oneself and one's relationship with others (the latter part of the chapter).

In practice, the data has been arranged and analysed with a coding system. First, I identified all the places which contain some kind of account of emotion. Once all these places were collected, I started to go "beyond the data" and assemble different explanations by structuring larger themes they were related to⁴⁰. In this way, I ended up with two main categories whereby emotions were described in the interviews. The first analytical level is related to discursive activities and includes emotions that emerge when technology is used. The second analytical level expresses material culture differently and depicts emotions that are profoundly rooted in the individual's sense of her/himself. In that case, an object is a mediator allowing the interviewee to express deep emotions, as sometimes the technical device served as a transitional object for the respondent.

6.1 Emotions and Acting with Domestic Technologies

When I asked the interviewees whether domestic technologies ever evoked emotions in them, their first reaction was astonishment. Given the norm of the purification of technology, the respondents' primary response to my inquiry was to emphasise the functional, rational and cold role of domestic devices, something that is not, at least at first sight, connected to emotions. At this point of the interview, it was common to state that technologies have nothing to do with emotions, as "they just are" and "they are just used when you need them". However, when I gave the interviewees some time to think further, they started to realise that technology might indeed evoke some emotions, usually when being used. For example, one of the middle-aged female interviewees stated:

⁴⁰ This kind of "making sense of qualitative data" is described by Coffey & Atkinson (1996, 26-53; 139-164).

A: It's very irritating if a device breaks down. You need to spend money whether you repair it or buy a new one. When gadgets work, they just are. You don't really notice them.

Q: Can you say what device usually evokes feelings?

A: Well, it's something to do with entertainment technologies. If you cannot make some function work, it's so irritating. You feel really stupid when you read the manual and you don't understand what they're saying in it. Even if it is in Finnish. When you have many devices, then you have to combine them somehow and you have many manuals...It really evokes negative feelings, that.

Heidegger (1982, 137) argues that objects and domestic goods are usually so close to us and so self-evident in their existence that we do not have to pay attention to them. However, if devices stop working or are out of their place, objects will start to scream for our attention and break typically unnoticed routine activities of the home.

Frustration with domestic devices is based on the assumption that technical objects are – and belong – to the background and they should be functional and rational. If devices fail to accomplish the purification demands and do not work properly or otherwise – aesthetically, for example – do not fit the home environment, they are prone to enter the consciousness and cause irritation. In other words, the nuisance caused by technical items derives from the fact that technology should normatively be controlled and mastered by humans, and should be subordinate to sociality.

It should also be noted that if a gadget breaks down, there are other solutions for the problem than just buying a new one because the routine activities connected to the new device should also be reconsidered. Gregson et al. (2009, 251) write as follows:

The moment of replacement, whilst enabling the resumption of a temporarily interrupted practice, is nonetheless critical to consumer practice: for consumers it involves working out often subtle new ways of doing habitualized activities (...) Such moments mark the point at which practitioners and objects come together anew, forging subtly new conjunctures between body and objects, and slightly new routines and sets of competences, to reinstate and stabilize a particular practice.

Consequently, the material object affects routines as a whole, and if the new and substituting device differs greatly from the previous one, all the routine activities of the home might change in accordance with the purchase. It is, therefore, quite understandable why the breaking of devices is considered so irritating and troublesome.

The previous interview extract with the middle-aged woman also demonstrated how she thought technology spoke a different language: at times she did not understand the language of technology that was used in the manuals – even if it was written in her mother tongue (Finnish). Yet again, technical devices should be unnoticed and self-explicable, but sometimes interaction with them causes hassle, meaning that the morally preferable balance between technology and people becomes threatened. Manuals were mentioned as interpreters between users and gadgets in many of the interviews; the moral divide between people and devices was commonly emphasised through these leaflets that were supposed to help the communication between technology and people. This is an example of Latour's (1993) term of "translation" whereby he explains how different actors (humans and non-humans) are able to communicate in networks of things and people. Manuals are translators that should be able translate and explain an appliance to the user and construct understandable and common definitions and meanings. However, as the previous respondent illustrated, this is not always the case and sometimes these leaflets cause more confusion and negative feelings than truly assist the communication between an object and the human.

Referring to the manuals is an interesting feature as it simultaneously divides people and objects, but also makes them similar to one another. The respondent implied that gadgets spoke to her via manuals. In other words, she applied an anthropomorphism to domestic appliances, which she considered having a language of their own and also communicating with their own language, the terms that are usually kept for the living and breathing species. Nevertheless, domestic appliances were thought of as a different race as they spoke a language that the respondent did not understand.

For the interviewees, negative emotions were the easiest ones to articulate. As mentioned in the first analytical chapter, the interviewees were particularly reluctant

to associate positive emotions with entertainment technologies. Furthermore, emotions were typically described emerging if a device broke down. Usually, I had to separately dig for positive emotions attached to domestic technologies, and the emotions that were culturally preferable seemed to be connected with the washing machine or food-related devices. As I have already pointed out in this study (see chapter 5), kitchen appliances are related to food that is considered social in nature and promoting the integrity of the family. Food is a medium of love and eating together means that the family members at the same nurture their bodies as well as one another. Having a family meal together is an explicit sign that the inhabitants invest in the time spent together.

The washing machine is another kind of symbol of nurture, as clean clothes and the smell of clean laundry denote emotional work done by the person who washes the laundry in order to sustain the ideal home (see chapter 5). Cleanliness is an integral part of the Finnish housing history. Saarikangas (2002) remarks that at the end of the nineteenth century, the functionalist movement in Finland started the hygiene project where the home was central. Novel housing plans at that time emphasised new kinds of family homes that were filled with clean air and sunshine. The individual hygiene and an overall cleanliness of the home were seen as the starting point when society tried to affect the lives of its citizens. Accordingly, hygiene became a norm that determined a happy and stable household, and mothers in particular were regarded as having the main responsibility over the spotless home. This ideological history was very much alive in the interviews, and the respondents highlighted the positive role of basic domestic appliances and their functionality in maintaining and creating the culturally ideal home.

There were a couple of deviant cases wherein the entertainment technology was given an explicitly positive function. First, the stereo system or other equipment used for listening to music were mentioned as an essential source of joy and pleasure by a few respondents. In such cases, it is obviously not directly the material object that is entertaining, but the music it provides. As one of the middle-aged male respondents told me: "IPod gives me positive emotions and experiences everyday. It is maybe the most magnificent device that I have ever owned." Nevertheless, besides the functional role, these respondents explained that the audio system itself, as a material object, is also important as it reminds them of the delight that music

can offer. For these interviewees, music was not merely something to listen to. It embodied their lived lives and reminded themselves of who they are. Another interviewee, also a middle-aged man, told me in great detail how he had compiled his stereo system, and how this project had been a large part of his life during the past few years (see chapter 5 for Antti).

The commonly stigmatised television was another entertainment device that a small and selected number of respondents admitted finding important and providing pleasure in their life. Especially busy mothers and the elderly mentioned the television as an important source of relaxation, and for these people it seemed to be more acceptable to watch television than for others. For women, watching television and surfing on the Internet were an opportunity to have their "own time" at home, which they often justified by referring to their otherwise hectic life and domestic work load. For men, on the contrary, browsing the Internet or watching television were considered an activity that took them away from the family or social relationships. As an elderly man described his wife's attitude towards his television viewing:

I don't know. Well, maybe it's that television then. If I watch the sports, I won't communicate with my wife that much. For example, when I watched football some time ago, my wife said to me that "how is it that you don't talk to me?" (laughs) But hey, it's typical that you concentrate on something like that.

This interviewee's wife also watched a good deal of television, but neither reported her watching a problem. Accordingly, it is culturally more appropriate for women to use entertainment technologies, at least at a discursive level, as it enables them to have a break from the busy domestic life. Men's actions with entertainment, in turn, are considered more unnecessary and selfish in nature (see also Peteri 2006, 292-294).

Being able to relax is an essential feature in maintaining the feeling of belonging to the place and in making it one's own (aesthetics in Miller's terms). Surprisingly, one of the interviewees said that appliances used in cleaning promote this kind of feeling. Cleaning is an act that sustains and contributes to relaxation and thus separates home from the official sphere of life. In this case, it is not the technical device itself that contributes to the feeling of home, but the human act that is pursued with its help.

Consequently, these technical objects mediate tidiness and maintaining the feeling of home. One male interviewee, for example, stated that he liked to vacuum because "you can see the result instantly, which is nice. And you don't have to think about anything while doing it. It's just physical, something that's lacking from paid work nowadays." The respondent thought that vacuuming was a chore that relaxed him and separated his home from work. Further, vacuuming can be seen as a controlling, aesthetic act that is used to mark a place as one's own. Another respondent, a woman in this case, reported that a juicer helps her to separate weekends from weekdays:

That juicer, I associate it with weekends. We want to invest in relaxed and peaceful weekend mornings so we make breakfast differently from weekdays. It's a sort of luxury that we make fresh juice or yoghurt drinks or something. It feels really nice. (...) When I take the juicer from the cupboard, I realise that aaaah, now it's weekend.

The extract shows that a small technical device may connote really important and positive feelings to the user and the device itself can be a symbol of something that is desired and anticipated. To this interviewee, the juicer represented leisure time and a departure from work, which she distinguished from ordinary workdays by referring to it as a luxury experience. It was the material object alone that was able to provoke this feeling of pleasure as taking the juicer out of the cupboard instantly connoted relaxation. As Jenkins et al. (2011, 263) argue about the temporal significance of objects, "we differentiate between times of the day, days of the week and special occasions by the use of 'things'".

A 34-year-old female described a similar experience by pinning down her almost existential behaviour with the oven as follows:

A: When I bake, I sit in front of the oven door and just look into the oven. Those are good moments. It's to do with feelings, you know (laughs).

Q: Why do you sit there?

A: Well, I like to watch. For example, if I bake bread, I'd like to watch how it rises and how it bakes there. It's relaxing.

Q: What kind of feelings does it involve?

A: I reset my brains. And quietness. It's my quiet moment. I feel good right now even if I just remember those moments. Those really are nice minutes

when I just sit and watch. My husband always laughs at me and asks that "How come you don't watch the telly, why do you stare at the oven?" (laughs)

Basically, this quote illustrates a deep experience the domestic appliance enables. As with the previous respondent, this case is about relaxation, but this interviewee described her habits as so powerful that she could remember the positive feeling even at the time of the interview. The same person had earlier in the interview commented that she considered baking her hobby and enjoyed being able to bake without hurry. As a professional photographer, baking was her way out of the hectic work life (compare with Silva 2010, 96). Visual elements seemed important in this hobby as she depicted how she liked to watch the bread to bake. The oven was in the centre of this experience as it was essential in the baking process and allowed her to see her hobby materialise. In her words, watching the bread to bake was better than watching television. Intriguingly, the oven was compared with the television that also demands visual engagement.

6.2 Emotions and Memories Related to Domestic Technologies

Contrary to the normative emphasis on negative feelings, some accounts were quite positive and managed to evoke positive emotions even at the moment of the interview. As Miller (2008, 91) argues: "People sediment possessions, lay them down as foundations, material walls mortared with memory (...)." In this section, I analyse the device-related memories the respondents recounted in the interviews. In some cases, I explicitly asked whether they had any memories that were somehow linked to technology, but in others, the interviewee started to reminiscence without my specific request. The respondents' memories were different kinds. First, there were memories linked to routine activities and making one's everyday life easier. Second, emotions were described in terms of the loved ones and they were told in order to express love and affection toward an important person in the interviewee's life. In addition, there were emotionally loaded memories that cherished one's family and/or a close relationships and mentioned the role of technology in bringing people together. The third type of emotions moves away from social relationships and highlights the material object itself. In this cluster, emotions were related to a new innovation or to a device's new kind of physical appearance.

Emotions, Technology and Routine Activities

The first group of positive emotions toward technical objects consists of accounts where mainly the elderly interviewees described how some new innovation had made their lives easier and better in the past. Naturally, the younger interviewees also described how technical devices had a functional role in maintaining everyday life, but the elderly recounted their stories in greater length and depth. Whereas the younger group of respondents was content to mention briefly, for example, that "the washing machine enhances my everyday life", the elderly gave longer and more detailed accounts on the technical history of their life. A case in point, a 74-year-old female interviewee told me about her first washing machine:

A: My stepmother had a washing machine. It was not automatic, it was a wringer washing machine. We went to see that machine with my newly-wed husband. To see what kind it was. After that, we bought one of our own.

Q: Was it a nice thing to have?

A: Yes, it was, yes. Washing laundry was so much easier after that. Even though you had to heat the water for it and stuff like that. This also led to other things. We had a wood-burning oven and a cellar stuffed with wood at that time, and then my husband bought us an electric stove. It was a tiny stove with two burners. You just had to plug it in and that's it! You could cook potatoes and porridge with that. It was so wonderful.

The final utterance of "[i]t was so wonderful"⁴¹ directs attention to the emotional side of the story. At this point of the analysis, it should be noted that these kinds of emotional utterances are not very common in Finland, and when someone uses such words as "wonderful" or "lovely", it could be interpreted as a major display of emotion⁴². This extract is similar to many others in its portrayal of how life became easier for the mother of the household. If the male partner shared a similar story, it typically reflected the masculine role of the breadwinner and how the device was bought to mitigate woman's domestic duties. Further, as the extract above illustrates,

⁴¹ "Se oli ihanaa!" in Finnish.

⁴² Another way of using "wonderful" ("ihanaa" in Finnish) is to use it ironically, but this was not the case in this extract.

other people who already owned a certain object were usually the catalysts for acquiring that device. In this case, it was the respondent's stepmother who first had the washing machine and whom the couple visited in order to see this new innovation live. Other interviews also revealed how other people and good appearance in their eyes might have been one of the reasons for a particular purchase; they hinted that the device was not merely purchased to make women's life easier, but might also have been a question of masculine pride and higher social status.

Whatever the case, the stories told by the elderly highlight the changing role of technology in people's everyday lives. They told me refined accounts about these transitions and managed at the same time to exemplify the life-changing role of technology and remind us that not all technology comes in the form of an appliance, but occasionally manifests itself in the infrastructure. For instance, one older male respondent defined electricity as technology and explained how electricity improved his childhood:

A: I think electricity is very important. I lived without electricity from the year 1939 to 1945. We lived in a farm and had two kerosene lamps. One of them was in the kitchen, and the other in the big farmhouse living room. There were always problems trying to get kerosine for the lamps, and it was not a lot of fun trying to do your homework in the light of that lousy lamp. That's why I argue that electricity is one of the best innovations, and it provides you with quality of life. I wouldn't live like in the old days anymore, that would be, well... (laughs).

Q: You talk about the quality of life, what does that consist of?

A: First of all, you don't have to get wood and fiddle with those kerosine lamps. (...) Well, I think that it's about the quality of life that when you go to sleep you just switch off the lamp. You don't have to fear that your house burns down during the night because the lamp might blow off. (...) When there was no electricity, it was especially the women that had to do all the heavy chores, for example, washing laundry by hand, washing the dirty dishes and so on. Now we have washing machines and everything and the quality of life is better. That's how I validate my argument.

In the citation above, the interviewee explicitly refers to emotions when talking of how "it was not a lot of fun" and how "you don't have to fear". These utterances denote "the quality of life" and the fact that technology has improved it. Two elderly men in the data talked about electricity and described the huge effect it had had on

their early lives. They considered technology a wider phenomenon, not only a tool that is used, but a whole infrastructure enabling people to use all kinds of technical devices. Electricity was a type of technology that was not criticised in any way, although single technical devices received critical words from both of these interviewees. This might be due to the indisputable profits of electricity. As the extract above indicates, electricity is about the quality of life. It contains both safety issues in the domestic environment and facilitates chores and other domestic activities.

In the accounts above, technology and positive memories with emotions attached to them were associated directly with routine activities, and moreover, appliances (or electricity, as in the previous case) were seen as extensions of humans and facilitators of people's duties. This discourse had no negative connotations, as the starting point was the past without domestic technology. Similarly, the experiences and memories of the first technical innovations are thoroughly positive in nature, since there were no other innovations to compare them with at the time. When the elderly discussed novel technical innovations that were used primarily in entertaining, their attitudes were much more critical. Having lived in the early days of domestic technology understandably changes the stance toward technical devices, and the idea of "what is really needed" in the home changes along with the personal technical history of the interviewee.

Emotions, Technology and Social Relationships

Other types of emotions emerged when an interviewee started to reminisce about how certain technology had been central in forming and maintaining social relationships with a family member or with a community. The most obvious technical objects in this category were the ones meant to be used in interpersonal communication. As a young male respondent recalled:

Emotions arise if I get to...For example, yesterday I spoke with my sister who's on holiday in South Africa. I spoke with her via Internet and she sent some video clips and still photos to me. That was emotional in some way. The same applies when you get photos to your mobile phone. If my common-law wife, for example, is abroad, it is nice to receive a photo from her. It feels good. It's not the gadget itself, but the interaction it enables.

According to this interviewee, it was not the technical object itself that evoked these feelings, but the result that it enabled, that is, the interaction. As Raudaskoski (2009, 114) mentions, SMS messages are often used in "maintaining social relationships". Further, mobile telephone is a convenient way to feel closeness with people travelling or living abroad (*Ibid.*, 127). Clearly, this maintaining of social relationships with the help of technical devices is something that stimulates positive emotions. As the respondent above argued: "It feels good."

Many of the interviewees mentioned their mobile phones and computers as one of the most important domestic technologies they own, which is not surprising in terms of Finnish statistics: in the spring of 2009, 80 per cent of the households owned a computer (*Tieto- ja viestintäteknikan käyttö -tutkimus* 2009), and at the end of 2008, there were 6.9 million mobile phone plans in Finland (*Televiestintä* 2008). Finnish people are, accordingly, used to keeping in touch by phone, chat or e-mail. This feature was not only apparent with the younger respondents but also the older interviewees stated that mobile phones were a necessity in their lives. In their cases, portability was sometimes connected with safety issues, but mostly their feelings, too, were positive because the mobile phone enabled them to talk with relatives or friends.

Besides their apparent benefits in communication, domestic appliances in some cases were described as having a special role in forming and maintaining the relationship between the couple. In the next extract, a middle-aged woman explains how a little portable radio had a central role when she had just started dating her current husband:

A: We had just started to date and I remember that we used to listen to music during the nights. The most important device we had at that time was a little portable radio that had the worst sound system ever (laughs). Every time, the last thing we listened to was Alan Parsons or something like that. This is a really endearing memory. You couldn't then tell that my future husband was going to be a very enthusiastic hi-fist (laughs).

Q: That's one positive memory, that.

A: Yes, it is. When you think about that device, it really wasn't very high quality, but it was really important in creating the right atmosphere and feeling.

Later in the interview, the same respondent revealed that they still had that little radio although it was hidden behind the curtain because "it's so ugly" and doesn't live up to the husband's idea of a good sound system. However, the object itself contained and conveyed positive emotions and memories, and it was therefore an important reminder of the couple's life together. The presence of the radio could be compared to a wedding photo located on a bookshelf to remind the couple of their commitment. This technical device might in a similar manner serve as a material proof of couplehood and still today transmits positive feelings to the couple. Basically, the radio as an object mediated "bonding value" to the interviewee. As Godbout and Caille (1998, 173) explain the bonding value of objects: "[B]eyond their exchange and use value, and relatively independent of either, things take on different values according their capacity to express, to facilitate, to foster social ties."

In some cases, it was not a family member that some gadget helped to mention but the intimacy of a whole group: family or other community. According to the interviews, technology brought people together and might offer positive experiences in the form of mutual entertainment, or, as in the next case, in creating a community:

I remember that we had the television really early compared with others. It was the late 1950s or early 1960s and we lived in a rental apartment. It was fun because all those people living around us came to our apartment to watch the telly. Our home was full of people, and they were so noisy that I had trouble falling asleep (laughs). It relates to sociality. I noticed then that there are different people in the world, but we all have something in common.

In this quote, a middle-aged man reminisces about his childhood and realises how important their television had been in the neighbourhood. To refer to the emotional aspect of the television set, he used the utterance "it was fun" meaning that he considered this story a positive one emotionally. Contrary to the popular type of television memories, he did not look back to the innovation as such; talking about the first programmes in black and white or recalling the lousy picture of the first broadcasts. Quite uniquely, he brought out the idea of sociality and integrity of television viewing and highlighted the educative role of that activity: when all the neighbours gathered together, he realised that people in the world were different, yet had something in common. In this way, the television also advanced the respondent's socialisation into the Finnish society. Further, the interviewer recalls, with a laugh, that the household was so crammed with noisy people that he was barely able to

sleep. Despite this slightly negative remark, the overall memory was positive in nature and the respondent used laughter to imply that he had no trauma or other negative recollections from these early experiences with the television and the related community.

Another illustration of technology that enhanced social integrity was given by a man in his late thirties:

A: This might be strange to people who have always lived in the population centres of Finland. However, when I was a child, we had only two TV channels, and one of them was lousy, you couldn't see the picture properly. If some important (laughs) programme was on in that channel, for example, an ice hockey match, that meant that my father had to climb onto the roof while I stood outside by the window. Mother was inside and shouted when the picture in the telly was good enough (laughs).

Q: Did you have to do that often?

A: Yes! (laughs) I remember that for the rest of my life. It depended... If the weather was really bad, you couldn't get that antenna into the right position at all (laughs).

This quote is a typical one describing the joint action originating in technology. At first glance, there is a negative tone in the memory, but the respondent talked about it in a constructive tone, as something that he would like to look back upon for the rest of his life. I argue that this arises from the sense of integrity that is a consequence of the collaboration when the family tried to sort out the problem together. The whole family had the same goal, and everyone had her/his own role in the activity that enabled them to watch the television together in the end. This is an intriguing account because of its underlying negativity: it is rare when the broken or only partially functioning device is discussed without frustration or anger. Why is that? As I have already pointed out, the family members were brought together because of the inoperability of the device, but in addition, they forgave the weak signal because it enabled something more precious: time spent together with the family. It could be argued that the emotional significance of this memory was to sustain the experience of "our family"; the intimate unit that continued to positively affect the respondent's life even in the adulthood (Saarenheimo 2012, 189). Further, as the respondent said, during that time, they lived outside the population centres of

Finland. Hence, the device alone could not be blamed for malfunctioning, but also where they lived at the time: on the borders of the broadcasting area.

One middle-aged man, who told a moving memory about his then dying mother and late brother, provides the final example of this kind of "societal" and "communal technology". This respondent linked these sad experiences to the material description of his family's first colour television:

Our first colour television, I have a very strong memory attached to it. Well, my mother had been seriously ill for a long time, and we had lost one of our brothers at one day of age. When my mother came back from the hospital, our father bought us a colour television. It was a silver-coloured Sony television with a feather touch button that was terrific. You didn't have to push the button that much, you just touched it gently and the channel changed. The thing is that our relatives had the same kind of television and they were a doctor's family. I was really little then, but even I knew that their status was sort of higher than my family's. They always had the latest gadgets and very posh cars, and we had a Lada and were quite poor. When my dad brought us that telly, it was an amazing experience. I remember all the colours and the smell of it. It was a huge thing for a little boy like me. Anyway, the first programme we watched on that telly was broadcast in black and white and that was a massive disappointment. I thought that "Is this it, the colour telly?" There were those little colour points on the front panel of that telly indicating that it should have colours. Well, the second programme was with colours. That first one was a children's' programme, so they might have thought that it doesn't matter that much if it is in black and white. I think that nearly half of the programmes were transmitted in black and white at that time. That is one of the most important memories from my childhood, a very personal memory for me.

The extract above includes several noteworthy issues related to emotions and materiality. For one thing, there is a connection between the television and grief. The interviewee links the new television to hard times in his family: their mother was seriously ill (she died a little later), and they had lost their baby brother. This new innovation served as a consolation for the family members, and even if not explicitly mentioned in the interview, purchasing the colour television might have been their father's attempt to comfort and cheer up the family. Sometimes words might be too much, and the television set mediated all the right things to the significant others: it signified caring and love. This material object entered the sorrow of the family, and by its material presence and positive images, lessened the extent and depth of the

sadness. Miller (2008, 164) argues that "[f]ocusing on things helps to keep us from merely descending into a mutual depression of reflected trauma". In this case, it was the television that prevented the family from descending into mutual depression. You could say that the object, the television, was the facilitator of the difficult memory, and without the television, this experience might have been too difficult to talk about to the interviewer.

To continue, the quotation points to the material aspects of the technical object. The respondent eloquently described the sensory feelings he experienced when the new television was brought into the household: he could still see the colour of the device and smell its scent and he even remembered the little panel on the front of the television which indicated that it was not a usual television, but one with colours. Furthermore, he remembered the touch of the feather touch button that did not need to be pushed as hard as the traditional one. As we have seen in the case of purification, the place of technology is usually said to be in the background, somewhere where it is not visible when not needed. However, as we all know, domestic devices are material: "something portable and perceptible by touch and therefore ha[ve] a physical, material existence that is one component of human cultural practice" (Woodward 2007, 14). There is no escape from this material essence of objects, even though it is this very aspect the respondents often criticised: devices were hard to locate: they looked ugly, or were too big to be suitably placed. Yet occasionally, the material qualities of an object were the very ones that enabled people to relive the experiences and convey emotions. As the respondent remarked above, the appearance and smell of the television set played a part in creating the positive emotion associated with it.

In addition to the material essence and the ability of the object to mediate hard emotions, the extract substantiates how domestic appliances are one part of a person's social status. The relatives of the interviewee had had the same kind of television before them, and these people were clearly admired for their material wealth by the little boy at that time. For example, they had "posh cars" whereas his

family drove a Lada⁴³⁴⁴. Having the same television made the respondent feel proud of his family, and he seemed to think that their status in front of other people would ascend along with the acquisition of this new domestic appliance. The social status connected with material possessions has been studied in sociology and material culture studies, which commonly argue that different classes consume differently. However, it is not simply a matter of resources that restrict or enable consumer habits of a certain kind, but comparison with others with the higher status might also facilitate (or constrain) purchasing decisions (for example Bourdieu 1984, Veblen 1934. See chapter 2 for identity and status in material culture).

All the respondents describing an emotionally loaded memory related to the television were men (five men in total). Although women did not completely exclude themselves from entertainment technologies, they did not attach that much emotion to them. I will return to this gendered aspect later on in this chapter. Two women in the data, for example, talked about emotions that were attached to the radio (positive memories), and two other women described a negative memory that was associated with the broken washing machine and flooding in the toilet. Furthermore, another female connected domestic technology with the noise of her childhood home. There was only one female respondent in her thirties who offered quite a neutral memory concerning the television, and she linked the television to her approaching childbirth. As she told me:

The television relates to the birth of my first child. I had had contractions for several days, and "Finnish Survivors" was broadcast for the first time at that time. It was the programme where the contestants bumbled around in the bushes somewhere far away. That was easy to watch given my laborious state of being. I don't watch those kinds of programmes otherwise.

In this memory, the television and especially one programme, "Survivors", is associated with physical pain. The memory differs from the ones told by the male interviewees because the television itself does not contain any particular meanings

⁴³ Lada is the Russian car make that was designated for the Finnish import. In the 1970s and 1980s, Lada was a relatively cheap and common car in Finland. Nowadays, they are rare in Finland, but popular in the hobby fraternities.

⁴⁴ A new car has a high status value in Finnish culture (Wilska 2002, 202).

(social bonding, social status, or/and emotionally hard times): the object was simply used to kill time during the painful contractions. As mentioned earlier in this study (see chapter 5), the entertainment technology seems to "belong" to men and women identify themselves either with time-saving technologies or small and simple devices such as radios (Gray 1992). However, women in the data mentioned watching television, but that was not considered very important (except by one female respondent), and the activity or the material device itself was not regarded as significant as in the stories of the male respondents. On the other hand, this connection between men and entertainment gadgets cannot be completely proved by this data as there were also two men who did not consider television important and stated that they could easily live without it. In conclusion, it could be said that men might connect more positive emotions with the television than women, but the correlation is not written in stone as the interviewees' attitudes seem to be linked to their age and current situation in life (whether the person is retired, working parent, stay-at-home parent etc.).

Emotions and Aesthetics of Domestic Appliances

The third type of emotions was linked to the aesthetics of domestic appliances. As mentioned in the previous section, devices have a material essence and they are physical beings inhabiting our homes. To continue, users of technology can be regarded as "aesthetic subjects". As Venkates & Meamber (2008, 51) write:

(...) aesthetic experiences can be extended to everyday objects, from the style of a piece of clothing to the shape of a coffee mug to the interior decor of a room. To the extent that individuals view everyday objects or special art pieces aesthetically, we argue that they are doing so in their capacity as aesthetic subjects.

In the previous chapter, I analysed how aesthetic issues were part of acquiring and locating technologies in interviewees' accounts. However, these accounts rarely mentioned the emotionality that might have been involved in those processes. Rather, aesthetics was part of the practical controlling act whereby the domestic environment was made one's own.

In this section, aesthetics is explicitly linked to emotions.⁴⁵ For example, a man in his sixties reported that: "Of course, after the kitchen renovation, when you walk by the kitchen and see all the matching appliances, it can be thrilling." By saying this, the respondent referred to his positive feeling when he saw the new kitchen and the devices that fit the environment aesthetically. Of course, his feeling might originate in the fact that he was also pleased with himself. After all, it was he and his wife who had succeeded in picking the right objects and placing them in such manner that was pleasing to their eyes. Whatever the case, this demonstrates that domestic technologies are consumer products, so they can be aesthetic and their appearance is not unimportant. As Venkatesh & Meamber (2008, 47) argue: "[A]esthetics are part of everyday life of consumers who negotiate aesthetic meanings through everyday life experiences and consumption practices." This can also be seen in the statement by an elderly male interviewee: "Appearance is important. Devices are present and visible all the time, so if they are really ugly it makes me feel sad. You have to have little eye candy too. I have an eye for beauty."

In the first analytical chapter (chapter 4), I argued that technical devices, especially entertainment technologies, are a threat to the order of the home and therefore have to be moderated, controlled and purified. Nonetheless, there were two exceptions where an appliance did not endanger the practical and emotional home environment: antique and design objects that were directly related to emotions. It could be said that "[p]eople use things to adjust their relationship to time" (Attfield 2000, 215), and this was also visible in my interviews. Antiquated or old-fashioned devices were desired for and they were said to enhance, not jeopardise, the decorative order and feeling of the home. One middle-aged female interviewee, for instance, commented that she would like to purchase an old vinyl player as it would "give an edge and bring old, warm values to the home". Furthermore, one male respondent wanted a manual cassette player and an old reel-to-reel tape recorder "which should have nothing digital at all". Accordingly, these objects were considered decorative in nature and embodying and conveying warm feelings and associations.

⁴⁵ In consumer culture studies, aesthetic experience has been connected to emotions (see, for example, Venkatesh & Meamber 2008, and Dewey 1934 and Dickie 1971 for art and emotions). As Townsend (1997, 79) argues, aesthetic objects produce different emotional responses.

Anni Vilkko (2007) writes about nostalgia and the home and argues that home is often a place that calls out for nostalgic memories. In fact, the etymology of the word nostalgia is in "nostos", meaning returning to home. Nostalgia could thus be seen as a force that creates familiarity and the notion of home. We have all had former homes against which we compare our current one, and these memories and feelings of the earlier home create part of our current home experiences. As Vilkko (*Ibid.*, 20) puts it: "Home and homes, present and preceding ones, are rooted deeply in the bodily practices and in the mind."⁴⁶ Therefore, since older technical devices connote past experiences and feelings represent nostalgia and nostalgia is connected to the notion of home, an old, nostalgic gadget denotes no threat. This kind of "taste for heritage" is also noted in design studies, which point out that people tend to strive for some kind of "nostalgic 'other' times" with the decoration and furnishing choices of the home (Attfield 2000, 221).

Another type of devices immersing effortlessly in the home were those that could be regarded as design objects. In my data, there were surprisingly many respondents who considered themselves "design people", appreciating the cutting-edge, state-of-the-art design. As pointed out already, design was also seen as implying the good quality and performance of the gadget. Furthermore, design-awareness was not restricted to women but one of the most wholehearted and self-proclaimed design people in my data was a 39-year-old male interviewee, whose interest in art and design could also be seen in his occupation as a graphic designer. This respondent admitted being ready to invest money in design objects "to the level of vanity", but he also justified his passion by stating that "if the appearance of a gadget is carefully designed to endure time, it is, so to say, timeless, then it usually means that it is of good quality, too. It is made to be used and it is durable". He could eloquently elaborate on his choices of technical devices, as in this excerpt where he rationalised his purchase of a designer coffee maker:

A: I really like our coffee maker (...) I got attracted to it a long time ago, at the time when you could only buy it abroad. The reason was...I think I quote some caption now, but the reason was that "things are thought differently". Coffee makers are to some extent very much alike, and their functions and usability are the same, too. But this coffee maker, in this, everything has been thought out differently: how it is used, what the situation is where it is used,

⁴⁶ The translation from Finnish into English by IA.

how much it is used, what you need for using it, everything. And it really works! I have to say that although it was quite highly priced and it's just a filter coffee maker, I'm really pleased to have it.

Q: You said that you couldn't buy it in Finland at that time. Did you have to search for that device for long?

A: Well, I don't remember exactly. It was the time when we were renovating this apartment and everything had already been planned. We didn't have a coffee maker and weren't interested in acquiring one either. Then I think that I came across that machine in some journal. I saw a picture of it and started to hunt for more information because of that picture. At that point, it felt like we were going to buy a coffee maker after all. I was to order it from the Internet, but then I managed to find out that a small shipment was coming to Finland, so we used that channel. Overall, the process took several months.

The interviewee pointed out that the device was not just a coffee maker, but it embodied his ideas of the world: "things are thought differently". In this case, the process of purification was more like a hybridisation, as "a device is not just a device", but it was emotionally and at a personal level very much attached to the interviewee. You could argue that acquiring the specific coffee maker was a statement to other people as well as to oneself: it mediated the interviewee's personality and values to others, but it also maintained and reflected his idea of himself and sustained the self-identity in the home environment. The same kind of self-maintaining and mediating were also present in terms of aesthetic and nostalgic objects. They belong to the home as they are considered an extension of the inhabitant. They remind us and others of who we are, how we see ourselves, what we feel, and what we aspire to be (see also Venkatesh & Meamber 2008). In addition, the respondent seemed to have enjoyed the long process of finding this particular coffee maker. As Woodward (2011, 377) suggests: "As much as the possession of the thing, the pleasure comes in the search, the anticipation."

6.3 Chapter Summary

In this chapter, I have addressed the question of technology and emotions and asked: What kinds of emotions are attached to technologies? Where do the emotions emerge from? What kinds of situational contexts are present when technologies are regarded emotional?

I have shown that the normative starting point in terms of domestic appliances and emotions is that they do not belong together: technologies "just are" and they are "just used". This is, once again, an example of the cultural purification process whereby technologies are categorised as something insignificant compared with humanity and social relationships. In addition, the interviewees first reacted with amazement to my question about technology and emotions, but after giving it some thought, they usually reported negative emotions that were related to non-functioning or completely broken devices. This could also stem from purification. When technology does not work properly, it has power over the helpless user who has suddenly become the victim, not the master of technology, as the purification norm promotes.

On the other hand, the respondents also mentioned situations where technical objects brought back positive recollections: for instance, the cleanliness of home enabled by the washing machine. In addition, they also talked about kitchen appliances in a positive manner because they were associated with food and nurture. Equally, they mentioned kitchen appliances as implying free time and relaxation, something that differed from the hectic work environment.

Although some devices were associated with contentment, joy/pleasure were closely related to frustration/irritation. As argued earlier, such categorisation of emotions was most prominently present in the interviews, and negative feelings were given priority as "the role of technical objects is to work". This is, once again, an example of the controversy between functionality/practicality and sociality/emotionality. As the interviewees stated, technology should be practical and functional, and when it is that, it is invisible and "*in its right place*" in the home. If domestic appliances break down or do not otherwise work properly, they enter the social realm and evoke negative emotions and feelings. The emphasis on negative emotions may arise from the so-called "feeling rules" and "emotional habitus" that are inscribed into the interviewees' views of the world. As Burkitt (1997, 43) argues: "One could say that a culture provides for people an emotional habitus, with a language and set of practices which outline ways of speaking about emotions and of acting out and upon bodily feelings within everyday life." (italics by Burkitt) Consequently, it is normative to purify the technology, raise humanity over technicality, and preferably express

negative feelings rather than admit being too affected or subordinate to technical objects.

Burkitt's (1997) idea of emotional habitus could be related to that of Arlie Hochschild (1979, 2012), who writes about emotion management and feeling rules in more depth. Following Hochschild's thoughts on emotions and feelings, they are culturally and socially derived and people tend to follow and apply social rules governing the suitable emotion in different situations. In other words, for instance, funerals are occasions where people are supposed to feel some sadness or sorrow, and weddings, in turn, should arouse feelings of joy and delight. One could say that Burkitt's (1997) emotional habitus stays on the surface⁴⁷ as it examines talk about emotions, but Hochschild goes deeper by explaining emotions "from the bottom"; that is, how they are managed and where they come from. According to Hochschild (1979, 560), emotion management describes "how people try to feel", and it encompasses the work people pursue in order to suppress or activate desired feeling. As Hochschild (2012, 18) explains elsewhere: "In managing feeling, we contribute to the creation of it."

In Hochschild's (1979, 2012) work, feeling rules are the social norms that determine what kind of emotion is suitable in a given situation. These rules are always ideological, and they convert alongside ideologies. Put differently, feeling rules are social and socially constructed, and they "guide emotion work by establishing the sense of entitlement or obligation that governs emotional exchanges" (Hochschild 2012, 56). It seems to me that the most important feeling rule in terms of domestic appliances is that there should be no feelings. Purification is part of this "feeling rule of no feelings": it is the very ideological base of the whole rule. In other words, the primary rule is not to feel, as domestic devices are "just" technology. However, if the appliances fail to work as they should, the preferred feeling rule is to have feelings from the negative side of the emotional scale.

⁴⁷ However, I do not mean that this "staying on the surface" makes Burkitt's (1997) theory less valuable than Hochschild's (1979). "The surface" may also reveal something about "the bottom", that is, in this case, the cultural and social level from which the talk arises.

In addition to the emotional habitus and feeling rules, the tension between irritation and joy can be investigated through Spinoza's ideas on emotions. Described by Burkitt (2002, 157; see also Brown & Stenner 2001), Spinoza sees emotions as relational and emerging only in different encounters and action. In other words, there are no emotions without bodily action, and there has to be other people or objects in order to feel and be affected. Further, Spinoza introduces the counterpart of euphoria and dysphoria. Euphoria is an emotion that is prone to emerge "when the body experiences an increase in its power in an encounter with another body", and dysphoria appears "when the body experiences decrease in its power for action in an encounter with another body" (Burkitt 2002, 157). As remarked earlier, this "another body" may also be an object. Brown & Stenner (2001, 91) explain that this is linked to power relations as "affects of dysphoria determine the person in such a way that they diminish their abilities", and, in turn, affects of euphoria "are marked by an increase in power when 'agreeable' bodies unite into a new form of composition that extends the abilities to act of one or both". When a certain technical object works properly and therefore succeeds in providing what it is supposed to (whether that is entertainment or clean clothes), the user and the object form a functioning unity. If this is not the case, the user is inclined to feel disempowerment and therefore irritation.

In my mind, these three theories presented above neatly supplement one another when the focus is on emotions and domestic appliances. First, with the term emotional habitus, Burkitt (1997) describes how emotions and domestic appliances should be talked about: such talk offered by the interviewees emphasised the idea of purification. Hochschild (1979), in turn, is useful when explaining the "real", everyday life emotions in terms of domestic devices, not "just" talk about them. With her terms of feeling rule and emotion management, it could be argued that there is a rule not to feel, and this rule comes from the culture and social context in which we live. Technology should not include feelings and emotions, which is founded on the ideological process of purification wherein technical devices are separated from social realms. However, when real life activities with technologies in the home are contemplated, Spinoza's terms of euphoria and dysphoria are relevant. With them, it is possible to understand emotions which emerge in action with devices. When the interaction with the appliance is smooth, emotions are positive and euphoric, but if the device is difficult to use, broken or otherwise challenging, emotions include

dysphoric sentiments. Together these terms and explanations cover different analytical levels: Burkitt accounts for talk about emotions and domestic appliances, Hochschild rationalises how the interviewees think they should act and feel in terms of devices, and Spinoza clarifies why we feel how we feel when interacting with domestic technology.

To explain this idea differently, it could be argued that these three levels depict how the processes of purification and hybridisation operate. Purification and hybridisation could be said to situate at the opposite ends of a continuum. To begin with, purification is foremost an abstract idea behind the meaning-making of technology in general, and when purification is used in the meaning-making, the emphasis is on the active subject that operates and controls domestic appliances. This emphasis on the subject is used in order to keep the technology "in its right place", that is, to make a separation between technologies and people. In other words, purification is an abstract feeling rule affecting our thinking and meaning-making in terms of technical devices. Hybridisation, in turn, emerges in real life practices when more complex social relations are involved in the meaning-making of technologies, and the focus is not only on a single subject, "the master", using the device. A case in point, a particular technology, for example the television, is sometimes purified and sometimes hybridised, depending on the context where it is used or talked about. When the television is criticised, it is at the same time purified, and normative arguments about who should use the device, when, and how are manifested. This is pursued at an abstract level. However, when everyday life practices are contemplated and the common use of the television is accounted for, this device usually becomes hybridised, and it becomes evident that the device involves several social relations (for example, bringing people together) and may offer emotional pleasure, company, relaxation, and entertainment to the user/users.

Hence, the fact that the purification and hybridisation are located at different ends does not mean that they are opposite. They may be different in their ontology (purification separating people and devices at the abstract level and hybridisation mixing those two in everyday life practices), but it does not mean that they could not be used at the same time, nor that there would be any inconsistency in doing this. Indeed, the point is that they are both important when ascribing meanings to domestic technologies, and they are used to depict different encounters, contexts

and attitudes concerning technology. As we could see in the work of Burkitt, Hochschild and Spinoza, different theories highlight different contexts and viewpoints, but in the end they can be used to complete, not to contravene, one another. This is also the case in the processes of purification and hybridisation.

At the analytical level, I separated three types of memories concerning domestic technology in this chapter. To begin with, there were positive memories related to routine activities of the home. I studied accounts where mainly the elderly respondents depicted how some domestic technology had altered their lives for the better. For example, electricity and washing machines were mentioned as having enhanced one's quality of life.

Second, I analysed how technology might relay positive emotions by allowing people to interact with each other. A quite obvious example of this were different kinds of communication technologies that people used to stay in touch with their friends and relatives. In this case, it was clearly not the device itself that contained positive memories, but the fact that it enabled people to experience emotions that were connected with other people. Moreover, some respondents managed to illustrate how some device actually brought people and families closer to each other. In its early days, the television in particular was a device that gathered people together and created an intimate community.

In the second cluster of emotions and technology, one story rose above others. One male respondent reminisced about how his family acquired their first colour television, and how it was related to the hard times when their mother was seriously ill and they had lost their little brother. The interviewee remembered how their father brought the television into their household. Fundamentally, the television in this story was used as an intermediary of emotions: it simultaneously embodied soothing for the grief and stress and happiness for the new, long-awaited device. Besides, this novel material object was seen to increase the social status of the family. This recollection is a highly intriguing illustration of the power of the material world: the object may hold many different emotions at the same time, and it can be used as a mediator in sharing a very intimate story of one's life. I strongly believe that talking about the television – “just” technology – was much easier for the interviewee than directly telling me about his family tragedy.

The third type of technology related to emotions included the ones that represent aesthetics. In this study, I have outlined aesthetics as something that conveys personal order and preferences, and personal aesthetics is very essential when creating and sustaining the feeling of home. In terms of technologies, aesthetics is a relevant issue, for example, in decisions about where to locate devices. In general, domestic appliances are difficult to situate because of their "ugly" appearance (see also chapter 5). Yet, there are nostalgic and design objects that do not pose any threat to people's aesthetic senses. In this case, the interviewees mentioned a reel-to-reel tape recorder and some highly designed, state-of-the-art devices. The latter were usually gadgets which the interviewees had bought carefully, and only after a long consideration, and which, they claimed, symbolised and represented themselves, the owners.

6.4 Discussion

The issue of emotions and technological objects directs attention to the narrational character of objects (and human life in general). When talking about emotions and technical devices, quite many of the respondents told me about some events in the narrative form. There is a large body of methodological and empirical texts about narrative in social sciences, and it has been argued that in the 1980s a "narrational change" took place in the methodology of social sciences (see, for example, Bruner 1987, Czarniawska 2004, Hyvärinen 2004, Randall 1997, Riessman 1993). To sum up, I quote Woodward (2009, 59), who condenses narrative as follows:

To narrate is an essential aspect of being human. Everyone narrates; narratives are basic structures of everyday perception and action. We use narratives to understand what happens in our own lives, the lives of others, and the world at large. Narratives constitute stories. Narratives are not necessarily untruths, but they follow the logic of stories or trope.

However, the relationship between objects and narratives remains quite shallow and unexplored in social sciences. Uotinen (2005, 20) argues that stories and memories are an intrinsic part of the meaning-making; people make things, objects and life experiences understandable by telling stories about them. Consequently, researching stories makes it possible to reveal how people assign meanings to objects and events (see also Richardson 1995, 200 and Riessman 2002, 706). This means that stories

offer a lens through which the meanings of domestic appliances can be investigated. However, it should be noted that stories do not necessarily directly reflect the life the teller has lived and experienced. When the story arises from experiences, it merges the teller's own interpretation of her/his experiences to other people's experiences and to other experiences that have been mediated to the teller from outside her/his milieu (for instance through media) (see, for example, Uotinen 2003, 123-124.) Having said that, the stories in my data appear quite personal and based on interviewees' experiences. I suspect that this intimate touch of the stories derives from their link to emotions. In her thematic investigation on information technology, experience and narrative, Uotinen (*Ibid.*, 125) also mentions that the depictions about IT related experiences and the emotions that are linked to their use are very personal in nature. For these reasons, it can be assumed that people's stories about emotions and domestic appliances are – at least at some level – experienced in the real life. This can also be seen in the fact that within and alongside their stories, the interviewees barely echoed the stories conveyed by media and other institutional bodies: rather, they narrated their own life stories – not the kind that represent technologies and people in general.

Woodward (2009, 60) also states that narratives are frequently embodied in objects and “objects stimulate narratives, or they afford us access into them”. This argument was demonstrated in the stories the respondents offered me in great length about technological devices and their connection to emotions. Further, I think that some stories, for instance the one about the loss and tragedy in the family, would not have been shared with me had the subject not been a material object, the television set in this case. In addition, Woodward (*Ibid.*, 62) points out that when the meaning of some object is not fixed and it is “open to interpretation or debate”, there is “a strong need to narrate the object”. With regard to my data, this may indicate that the respondents were not comfortable attaching emotions to technical gadgets. As argued, emotions were considered being at odds with purification, and an emotional technical object could be seen as a total “hybrid” as it combined elements from the furthest ends of the spectrum (the purification at one and emotions at the other end). Put differently, this (imagined) polarity was a challenge that needed processing, and the problem of the meaning was resolved by using narrative.

The accounts offered by the respondents express and support the psychoanalytic theory of object-relations. Woodward (2011; see also Woodward & Ellison 2010) suggests that the idea of a “transitional object” introduced by Winnicott (1953) could be applicable when examining meaningful experiences between people and objects. The transitional object refers to the first object relation that a person experiences in her or his early childhood: through which the infant begins to understand the object as “not-me”. In other words, through some meaningful object, the child starts to develop a sense of her/himself, a “personal pattern”. Playing with the object also creates a so-called “third space” that is somewhere between the child and the object and serves as a space for imagination, creativity and play (Winnicott 1953). You could say that this third place dispels the boundaries between the subject and the object and “bridges inner and outer worlds, self and culture” (Woodward 2011, 380). It is noteworthy that people have and use transitional objects throughout their lives; they are not just objects experienced in the childhood. As Woodward (2011, 381) points out, “important relationships with objects continue to stretch much further than that and indeed may characterize the lifecycle”.

As we have seen in the previous chapter which addressed technical objects in terms of social relationships and in this chapter which focused on emotions and technology, technical devices can be analysed and seen somewhere between a subject and an object, creating a “third space”. Objects mediate and sustain social relationships and they may be seen to connect an individual to the surrounding culture by their ability to create and mediate meanings. Sometimes a certain device may even serve as a transitional object, as, for instance, in the case where the old portable radio was saved in order to portray and remind the couple of their early days together. Further, the depiction of the colour television related to the ill mother indicates a narrative that embodied the transitional object. The television in the memory is not “just” the television, but it contains deep psychic elements and emotions mixed with cultural and social elements (the television upgraded the social status of the family). I suspect that the actual television set does not exist anymore, but that it was merely the act of remembering this transitional object that brought back, for example, the tactile and sensuous feelings to the respondent.

Further, the transitional object and the emphasis on meaningful and creative object relations are connected to aesthetics in the sense that aesthetics could be defined as

an experience wherein a “person is provided with a feeling of fitting with an object and feeling ‘at one’, and “aesthetic moments are not thought, but felt” (Woodward 2011, 377;378). One of the female interviewees clearly described this kind of aesthetic experience when she told me about her sitting in front of the oven and watching the bread to bake (pages 181-182). The respondent found this experience hard to explain and struggled to give me a reason why she would do it. Woodward & Ellison (2010, 103) also note a similar struggle to verbalise such experiences and describe the phenomenon as a "spell' that holds person and object in symmetry and solitude". This appears a good explanation of the aesthetic experience described above in which the female respondent was immersed in activity and in the object; felt something beyond words and ordinary practices. As Woodward (2011, 378) characterises these moments with “intensity of feelings of awe and the sacred”, this female interviewee also felt something that transformed the everyday experience of baking into something much more significant – and this involved a very mundane material object, the oven.

Nostalgic, design and transitional objects are connected to the term “aesthetics of everyday life”⁴⁸. Under this notion, the aesthetic issues are discussed quite loosely. As Leddy (2004, 3) remarks, issues such as “personal appearance, ordinary housing design, interior decoration, workplace aesthetics, sexual experience, [and] appliance design” have been analysed within the aesthetics of everyday life⁴⁹. While domestic devices, one could say, are among the most mundane objects in the household and

⁴⁸ This can also be related to the idea of “aestheticization of everyday life” (Featherstone 1991, 65-82). One way to define this concept is referring “to the rapid flow of signs and images which saturate the fabric of everyday life in contemporary society”, which is connected to the consumer culture (*Ibid.*, 67). In other words, aesthetics expands to all areas of life, and it is common to mix different genres and high-art with popular culture. The experience with objects has also been analysed under this notion, and Featherstone (*Ibid.*, 71) writes about “de-distantiation” by which he describes “the pleasure from immersion into the objects of contemplation”. This is, in my mind, the very same experience that I have analysed in terms of emotional experience with domestic gadgets. As Featherstone (*Ibid.*, 72) further explains, this kind of experience “involves the capacity to develop a de-control of the emotions, to open oneself up to the full range of sensations (...)”. However, the concept of aestheticisation of everyday life does not primarily depict the everyday life behind the closed doors, that is, the home, but is used to describe postmodernism and modernity in urban and public places (*Ibid.*).

⁴⁹ Despite the wide variety of research themes within the aesthetics of everyday life, I have not found any studies addressing domestic devices in terms of aesthetics and decoration of home.

the everyday life, the previous example of the oven is a reminder that they might also involve aesthetic dimensions.

Emotions and technical objects may also be investigated through the perspective of identity. There are quite strong statements about “self-fashioning”, that is, the construction of identity with the help of consumer objects in consumer culture studies. In accordance with the many possible identities and “selves”, the “availability of alternative scenarios” may also produce emotions of anxiety and envy (Illouz 2009, 390-393). For some reason, the respondents did not tell me about these kind of emotions, nor did they refer to maintaining or/and acquiring some kind of identity in terms of technical objects. This finding is in line with that of Wilska (2002, 195), who in her study about Finnish consumers argues that “most Finnish consumers may not consciously consider consumption to be a major part of their identities”. For instance, expensive smartphones might be considered objects that would cause some kind of envy, but the respondents in my data did not express any such feelings. One possible motivation for this “shortcoming” of the data might be the purification demand and the fact that the respondents were prone to promote the so-called “good” and “normal” life that consisted of successful social relationships, health, and satisfying work (see Jenkins et al. 2011 for people’s everyday imagining concerning “just normal and homely”).

As argued earlier, the purification demand is an inherently normative and ethical principle steering the meaning-making of technical objects. It follows that identity work in terms of technical appliances may be considered something too shallow to express. To quote Wilska (2002, 195), “many consumption styles were also characterized by modest and rational spending patterns”. Moreover, accounting for one’s own identity might be hard and/or awkward to explicate, and the social statuses of others could be easier to contemplate. Illouz (2009, 394) analyses emotions embedded in the background of consumer culture – the ones that are culturally generated in terms of consuming, such as envy – and states that “[s]ome might be the unspoken and implicit background of our consumer choices, while others might be rather self-reflexive”. Clearly, envy or other emotions associated with status and identity are emotions that are unspoken, whereas emotions embedded in important social relationships are easier to put in words.

Some differences between genders were quite visible in the data, and those were, once again, connected with the television and the male respondents. For some reason, the female interviewees did not mention the television as particularly important in their lives, while men told many emotional stories related to the television. I have frequently pointed out the relationship between men and entertainment technologies in this study, but this feature of the data still managed to catch my attention. Intriguing here is the idea of men talking about their emotions. Men and whether and how they discuss their emotions have been of interest in some sociological studies, which conclude that men tend to distance themselves from emotions (Jackson 1993, 214), or men do not talk about their feelings (Duncombe & Marsden 1993, 228). Even though these studies address heterosexual relationships, they can nevertheless be used as an anchor here when pondering the linkage between men, television and emotions.

On the basis of my data, it appears that men were able to talk about their emotions. There were many interviews where the male respondent described his feelings related to domestic appliances, particularly the television. It could be argued that they were aware of the cultural connection between men and television so it was easier for them to speak about their inner life in that respect. Nevertheless, for me, the more essential issue here is the use of the material object in the talk. Put differently, it seemed easier for men to talk about their emotions when the main subject of the interview was the material object, and only secondly, their emotions. Primarily, they were talking about technology, which is a subject widely considered manly, and they were expressing emotions only as subordinate to technology. As in the case of the male respondent who told me about the new colour television and the difficult situation in his family, the material object was used as a medium of emotions.

Finally, it has been alleged that people resort to stereotypes if they do not want to talk about their feelings (Craib 1995, 155;157). In the interviews, stereotypes were mentioned especially when talking about sustainable development and technologies (see chapter 4), but I would not say that the interviewees specifically resorted to them when they were talking about emotions related to appliances. Accordingly, it could be concluded that both men and women were comfortable talking about emotions, but the reason for their contentment could lie in the “cold subject” of technology. With regard to the norm of purification, the respondents thought that they were

talking about “just” technology but emotions immersed in their talk almost unnoticeably.

7 Giving Meanings to Domestic Appliances and the Design of Future

We are programmed just to do
anything you want us to
We are the robots
We are the robots
We are the robots
We are the robots
We're functioning automatic
and we are dancing mechanic
We are the robots
We are the robots
We are the robots
We are the robots

(Kraftwerk: We Are the Robots)

This study has addressed the cultural process of making meaning of domestic appliances. I have sought answers to how and where people ascribe meanings to these everyday material and domestic objects; in what kinds of contexts and cultural frames these meaning-making processes take place.

In this chapter, I discuss the results of the analysis and contemplate them further in terms of the design of future domestic technology that manifests in the visions of smart homes. To begin with, I recapitulate and discuss the issues that have been analysed so far. In what follows, I introduce the term smart home and demonstrate what the notions of purification and hybridisation could mean for the design of future domestic appliances and infrastructures. Finally, I wrap up the study by reflecting on an alternative smart home design that would incorporate the cultural and social issues of domestic technology.

7.1 Summary and Discussion

The Purification of Technology

The main nominator in making meaning of domestic technology is the continuum between purification and hybridisation. In other words, when people talk about domestic technology or a specific device, they tend to shift back and forth between purification and hybridisation. The idea is based on Bruno Latour's (1993) thoughts about modern mentality where people separate "technical" from "social", and "natural" (nature) from "societal" (society). When the interviewees purified technology, they spoke about technical objects as "just technology": something that is distinguished from social tenets and valued lower than sociality. In this study, I have named this "just-talk" of domestic appliances the "purification of technology". The purification of technology is a moral and normative discourse that permeates the process of making meaning of technical appliances. In other words, purification is an abstract ideal which seems to actualise only occasionally and mostly at the verbal level. Purification is never complete, and it appears alongside accounts that embody social elements. Consequently, technologies are never just technical but purification also includes the idea of partnership, family, and emotions. In other words, domestic appliances – and technologies in general – are hybrids that combine technical with social; nature with society.

The normativity and morality of domestic appliances were expressed in discourses of control that aimed at managing the role of technology in everyday life and softening the threats of technology in the interviewees' minds. To begin with, the cost and technical features of the appliances had to be controlled. The user should identify her/his needs and select a device that would suit the acknowledged need. The general opinion was that a person should not purchase an object that is "too good" and/or equipped with features considered too excessive for the intended use. Second, the users of domestic appliances should heed sustainable development. The respondents were worried about natural resources and expressed a norm that people should take into consideration what they really need and the device in question should be ecologically ethical. Third, domestic technologies were seen to degenerate

the users and therefore their use should be controlled. In this case, a person should limit the time spent with the appliances.

Especially entertainment technologies and the computer were ascribed meaning to within this normative discourse, whereas different, "more valuable" activities, such as reading and outdoor activities, were emphasised and preferred. Finally, the purification of technology was expressed in terms of home. Home was described as the sanctum of familial relationships that are endangered by domestic appliances. The interviewees expressed different rules of how the essence of home and social relationships could be maintained by controlling the use and placing of domestic appliances. For instance, technical devices should not be positioned too visibly, and some parts of home should remain completely free of electrical gadgets.

These discourses of control were used in order to challenge the technological dominance and to retain the agency for the users of technologies. If a person could not express this kind of moral agency over domestic appliances, she/he also justified her/his actions as an exception to the rule. This way, the discourses of control were linked to ethical values and "socially shared ways of classifying the social world" (Silva 2010, 190). Put differently, discourses of control were considered social norms and part of the purification process, and they were important to express and apply in the everyday practices and attitudes concerning domestic appliances.

For one part, it might be that the emphasis on these discourses in the data was due to so-called "discursive monitoring that inhibits the intensity of presentation of materialist values" (Woodward 2003, 407). In other words, the respondents did not want to define themselves through material values, so instead, they distanced themselves from them in the interview situation through the discourses of control. However, I suspect that their emphasis is at least partly due to the purification. The home as a context for domestic technologies is so strong, ethically steering the meaning-making, that people need these discourses to "keep it pure" and authentic. In addition, the current world of consuming is very confusing and complex to the users of domestic technologies; there are too many choices to be made and too many meanings so that the positioning of the self and the identity within the markets is an enormous task. This may produce so-called "consumer anxiety" (see, for example, Woodward 2006, Warde 1994), and this anxiety caused by multiple consumer

choices and fractured identity might also trigger the discourses of control that are used to simplify and purify technologies from their threats. As Woodward (2006, 277) explains consumer anxiety, “the elementary problem is what to choose (...) and, crucially, how to explain – to oneself or others – why one has chosen such a thing”. In other words, discourses of control are used to (ostensibly) retain the power and agency within the users of technical appliances as these discourses enable the user to legitimise the purchase or use of some device, and they position the user higher than the appliance.

Agency is a focal theme in the norm of purification and the discourses of control used against technological dominance. Without agency and the ability to control domestic devices, there is a danger that technical gadgets will take over our lives. When the interviewees expressed agency, they at the same time demonstrated the purification of technology where they separated technology from themselves and social relations.

Although agency was used to express individual power to act in terms of technologies, it was nonetheless by this kind of agency that the interviewees also linked themselves to structure and culture. As Sewell (1992, 20; see also Giddens 1979 for the theory of structuration), among others, writes about agency and structure, "agency [is] not as opposed to, but constituent of, structure. To be an agent means to be capable of exerting some degree of control over the social relations in which one are enmeshed, which in turn implies the ability to transform those social relations to some degree". In terms of purification, this means that the purification of technology is a tenet "from below", from the culture, and when purification means stressing the agency of the people, it simultaneously returns to the culture. In other words, people undoubtedly have agency in terms of domestic technology, but this agency is a part of the cultural principle (purification) steering how people make meaning of technology. However, this kind of agency also has the power to change the structure, and it could be argued that the purification of technology may in the course of time influence the cultural understanding about technology and decrease the technological dominance.

Significant Others

I started to analyse the data with the notion of purification in mind, but the more I analysed, the more I realised that it is only one side of making meaning of domestic technology. Domestic devices were also given significance through social relationships in the lives of the interviewees. That was clearest when the focus was on the couples and the ways they negotiated the purchasing and positioning of the domestic technology and talked about their use.

I argued that the couples in the data talked about domestic appliances in the style of "conjugal we" and expressed either complementarity or controversy in terms of domestic technology issues. By complementarity I mean the case where both partners talk in accordance with each other about technological issues and acknowledge each other's needs, efforts and abilities. One could say that if the couple expressed complementarity, solidarity was visible (or audible) between them, and the practices and the interaction followed the reciprocal principle of the gift (Mauss 1990). For instance, when a female partner said she did the laundry in the household, her partner mentioned this in his interview and said that he did some other domestic task instead, or at least verbally acknowledged her work. When the two interviews of the partners were examined together, the result seemed quite complementary in the way the partners managed to express conjugal actions and talk regarding technical issues.

If the couple expressed controversy, the situation in domestic technology issues could be said to be unbalanced, at least at the time of the interview. In this case, technology (acquiring, placing and using of it) caused difficulties in the couple's everyday life, which was something that both usually mentioned in their interview. There were situations where, for example, the female partner felt burdened by her domestic work load and thought that her efforts were not properly taken into account and acknowledged by her male partner. Further, placing decisions caused trouble as the couples attempted to position the technical devices in their homes so that they would not harm the domestic atmosphere and social relationships within the family. This may also be analysed from the perspective of the gift: if a person's technology-related actions were not acknowledged or returned in some way by their partner, the debt started to accumulate and threaten the integrity of the social unit,

that is, the family or the relationship between the partners. However, controversy in technological issues was quite common, as the balance within relationships might be easily disturbed, for example, by new technical procurements or the breaking of old devices.

The interviewees were also linked to other people than just their partners via technology. Parents, children and friends were mentioned as forming a social circle that was composed of people and different technical gadgets. Naturally, parents thought that their role was to guide their children with technical devices; the interviewees with children at home took this responsibility seriously. In the case of the elderly, the relationship had been reversed as they were guided by their adult children, and the elderly seemed to trust their offspring with many technical practices in their household. Friends were the ones the interviewees frequently mentioned giving recommendations when they were planning new technology purchases and/or updating old devices.

From the perspective of the social circle of people, making meaning of domestic appliances seems thoroughly social in nature; in technical issues, the interviewees quite easily seemed to adopt a specific social role, for example, that of the guiding parent or the wife doing the laundry. The social role of the interviewee was, thus, delineated by the partner and his/her role in technical issues at home. For instance, if the interviewee considered the partner highly competent with technical devices, he/she would usually adopt a submissive role, trusting the partner's guidance with technical problems and acquisitions. This contradicts the tendency to purify technical gadgets which argues they are "just technology". What follows from this is that besides being "just technology", technologies are able to create social circles and social roles which are seamlessly integrated with different devices and practices involved in their use and purchase and which people either adopt or reject. Although domestic appliances may seem to be silent assistants in everyday life, they are entangled with our social relationships and the conception of our self-identity.

Emotions and Domestic Technology

Emotions could be said to situate very far from the pure purification of domestic technology that appears to be rational and stemming directly from the abstract notion of technological dominance. Contrary to the cultural ideal of purification, emotions seem to be personal and mainly arising from the practical encounters with technological objects. However, these two are connected: the instant reaction of the respondents to the question of technical objects and emotions was to claim that emotions and domestic appliances did not belong together. This stance reflects the purification of technology and could be analysed as being a normative "feeling rule of no feelings". Put differently, the principle of technological purification presumes that no social elements, such as emotions, should be mixed with technology. Nevertheless, when the interviewees pondered the question of emotions further, they mentioned annoyance and irritation caused by technical objects that were out of date, broken or otherwise hard to use. This could also be analysed as an example of purification because it requires that the role of technology is to work and consent to being mastered by humans. Irritation and anger are signals of "unsuccessful" and out-of-order technology, which enter the human and social realm when technology fails to work properly.

The purification of technology and the feeling rule of no feelings were the first reaction to the question of emotions and domestic technical objects, but as the conversation progressed, the interviewees also started to express positive emotions in terms of domestic appliances. The most positive associations involved technology as a whole infrastructure, enabling, for instance, lighting and labour-saving devices at home. In addition, the respondents mentioned the capability of technology of bringing people together and therefore assisting social relationships. For example, the television in its early days brought the neighbourhood together, and the mobile phone allows people to keep in touch no matter what the distance was. It seems to me, accordingly, that the norm of purification is most strongly expressed when talking about technologies at a general and abstract level, but when the focus shifts to everyday life experiences and practices, people start to hybridise technologies and mix social elements – social relationships and emotions – with technicality.

Domestic appliances involving emotions were often discussed in the narrative form, which relates to the act of purification. It has been argued that narrative is used when the issue is complex and the meaning of the object in question is not fixed or crystal clear (Woodward 2009, 62). It is not a coincidence that the question of emotions and technical objects in particular produced narratives. Emotions may be said to oppose purification since emotions appear to be irrational and deeply personal, instead of rational and normative as the norm of purification⁵⁰. The feeling rule of no emotions is part of the purification but very hard to accomplish in practical everyday life encounters with domestic appliances. This emotional conflict might have generated the narratives in which the interviewees tried to sort out the tension between technical and social elements.

Technical objects were also narrated as being a part of and mediating very personal and significant emotions. In one instance, a little portable radio was used as a memento of the couple's early years together. No longer in use, that object was not "just technology" that is used at home, but served as an illustration of the couple and their conjugal bond. For some reason, the radio was not purified at all in the talk of the respondent. This could be argued to stem from the emotions and recollections that it was able to convey to the interviewee. Emotions related to the important relationship with the partner succeeded to outweigh the need to purify. To continue, another interviewee narrated a story about the television set that was brought into their family when they were suffering from the loss of their little brother. The memory incorporating this domestic appliance was very vivid in the mind of the respondent, who seemed to link the new and very welcome television set to the difficult personal memory of the family trauma. Also, this case displayed no sign of purification, which, I suspect, is connected to the overwhelming emotions involved in the narrative. In other words, although the technical device was central in both examples, the stories told by the respondents were primarily about the personal emotions that were experienced so forcefully that there was no need to purify the technical device in question.

⁵⁰ I stress the choice of the word "appear", as social scientific research has shown that emotions are rational and social (Barbalet 2002, Boden & Williams 2002, Burkitt 2002, Hochschild 1979;2012), but in the everyday life of an individual, emotions may still appear to be irrational and very subjective.

Another kind of emotional experience involving domestic appliances and overruling the purification was the phenomenological aesthetic experience. This kind of experience was, for example, told by one interviewee who described how she would sit in front of the oven and watch her bread bake. In this case, the technical device enabled the creation of the so-called third space, the phenomenological experience, between the subject and the object. In the aesthetic and phenomenological experience, boundaries between the subject and the object are blurred: the interviewee described her act as relaxing and as her own time free of domestic and work duties. Woodward & Ellison (2010, 46) depict such emotional experience with the help of Winnicott's (1953) theory of object-relations and write about the link between emotions and objects that there is "an emphasis on the use of objects in establishing relationships for certain types of emotional needs and sustenance, and for bridging the inner and outer worlds, the personal and cultural spheres". Basic domestic appliances may, accordingly, also produce very positive and thorough emotions and experiences, not just irritation or anger. When the appliance is able to generate these kinds of "third spaces" between the object and the subject, it at the same time redeems its place at home and in the user's mind and therefore there is no need to purify it.

7.2 Contexts of Giving Meaning to Domestic Technology

At this point, it is time to return to the research questions. In the following section, I try to answer them as clearly as possible.

I asked how people ascribe cultural and social meanings to domestic appliances and what kinds of cultural frames affect this ascribing. Purification with its sentiment of "technology is just technology" is the primary cultural principle in the meaning-making processes in terms of domestic appliances. As explained, purification is mostly ideal and abstract, but it may also have practical consequences for everyday life, for instance when people try to place domestic devices at home so as not to obstruct the feeling of home.

At the practical and everyday level, though, the meaning is often given to domestic appliances through social relationships and the use that involves emotions. In these

cases, the accounts of purification include these social elements, and domestic appliances become attributed through hybridisation. In other words, "pure purification" is mostly expressed in the generalised accounts on technologies, which often echo and contemplate views conveyed by the media. This kind of pure purification is commonly related to technological dominance and dystopias, and the accounts of purification are used to contradict these threats. The everyday practices form a different frame to the process of meaning-making, and as we have seen, technologies become more social when they are talked about in this practical context. The way people make meaning of domestic appliances is, thus, very much relational, that is, it depends on the context and frame of their accounts. In addition, people may use both purification and hybridisation at the same time in their talk, but this does not mean that they are inconsistent. Rather, it demonstrates how the process of making meaning of domestic technology is simultaneously purifying and yet involves social elements that are normally kept apart from the purification.

Further, the material outlook and the notion of home affect the process of meaning-making, taking practical forms, for example, in decisions about where the objects are placed and arranging people and their places at home. For instance, it is not unimportant where the washing machine is situated, because it affects the ways the inhabitants (mainly women, in this case) organise their everyday routines. The common opinion seemed to be that domestic appliances are hard to locate because of their rough material appearance and electric wires they need to function. Moreover, sometimes the image and personal associations connected to the device alone affected the process of locating, as it was with the computer that was associated with work and was therefore preferably located out of sight.

In general, it could be argued that making meaning of domestic appliances is pursued at three levels and expressed either through one of them, or usually through a combination of two or three:

The cultural level that is mostly expressed through purification. In other words, to talk about technologies as "just technology" is a cultural norm and principle. The discourses of control are used as a part of the purification and they exemplify how domestic appliances should be ideally managed in the everyday life and routines. The

idea of purification stems from the technological dominance and threats that are usually learnt from the media.

The practical level and the interaction with the gadgets entailing social relationships and emotions. In general, it could be argued that "behavior toward objects is based on the meaning that individuals ascribe to (...) objects" (Kleine III & Kernan 1991, 311). In other words, the practices are coloured by the cultural level that is influential in the background. However, everyday practices and verbally accounted experiences shift meaning-making away from the clear purification and devices become more like hybrids that mix deeply social elements (social relationships and emotions, in the case of this study) with technicality. Domestic appliances connected with practices are capable of drawing people together and creating social bonds and therefore enhancing social relationships. At the same time, however, they may act in reverse and cause problems within social relations. Furthermore, domestic devices may produce negative emotions, especially when they are broken or hard to use, and in these cases meaning-making shifts back to the purification.

The material level and the appearance of devices. Domestic appliances are material objects and their appearance matters to the users. Devices have to be placed within the home, which is not an easy task as they are often at odds with the feeling of home and may convey negative associations. Furthermore, sometimes there is no consensus between the family members about where to locate some device, which may wander around the home for a long time until settling in a place everyone is pleased with. In some cases, though, the technical appliance may be used as the material remembrance of a special event or relationship even if the appearance is not much appreciated or the device no longer functions.

As pointed out already, the process of making meaning of domestic appliances is relational, depending on the context (for example, whether they are talked about at a strictly general, cultural level, or whether the context is practical and devices are talked about through the perspective of everyday life routines). It has been argued that "all meaning is 'meaning in context'" (Kleine III & Kernan 1991, 311), and ascribing meanings to domestic appliances is not an exception. Consequently, people try to organise domestic appliances in their minds and practically in their homes in very diverse settings, while at the same time it becomes clear that domestic

appliances themselves have a power to organise people, the time they spend at home, and several domestic places in which they operate. The norm of purification and discourses of control are used to tame this power, but still, at times, domestic devices seem to live lives of their own and speak a completely different language from their users (for example, when they break down or are hard to use). In most cases, though, the gadgets live silently alongside us and do not demand constant elaboration of their meaning and existence. In other words, we live alongside the domestic appliances, we live in terms of the domestic appliances, and we live by mastering the domestic appliances – all of these at the same time.

It could be said that the material level connects the cultural and practical levels; through the material substance, the domestic appliances become alive and part of our routines and homes. The materiality of the devices is intricate with diverse ways of being able to link the cultural with the practical. First, it makes the technical objects tangible, available and usable, which is usually experienced through different interfaces and controllers. How the device is experienced in action is largely dependent upon the interface. Second, materiality means different appearances, and as I have already argued, this is not an unimportant matter as devices are meant to be incorporated into a certain domestic atmosphere and decoration. Finally, the material appearance of the objects refers to diverse cultural assumptions and attitudes. For instance, the colour of the gadget calls out for different visualisations, and people tend, for example, to ascribe the gender of the intended user of the device in accordance with the colour of the appliance (see more about the gendered meaning of domestic appliances in Aaltojärvi 2012).

Overall, materiality is an intrinsic part of the practical and cultural levels, meaning that it is closely connected to sociality and to the social structure in which we live and through which we operate and talk. As Tim Dant (1999, 2) writes, "things of the world are incorporated into social interaction and provide an embodiment of social structures reflecting back the nature and form of our social world". However, distinction between material and social is not easily made, because material is itself a social product. On the whole, material culture is human culture. Although objects and their actions can sometimes resemble humans, they do not have social relations with each other (Dant 1999, 200). For example, even if ambient computing in smart solutions enables connection between technical gadgets, this relationship cannot be

treated as essentially social. Objects communicate with each other in order to accomplish a particular task: there are no feelings, everyday chatting or interpretation of gestures involved.

Why is it relevant to study the kind of cultural meaning-making this study has focused on, and who benefits from studies that address domestic appliances and people's relationships with them? One possible answer is, naturally, that this knowledge is important in its own right, within social and cultural studies that aim to deepen the understanding about the world, people, cultures, and societies that we live in. Everyday lives in domestic settings and people's relationships with domestic material culture are research subjects that have too often been neglected for being so "obvious" and seemingly self-explanatory. However, all the clarity of these subjects fades away when they are more closely scrutinised. The only clear point at this final stage of this study is that people and their everyday life in terms of domestic appliances are complex and multifaceted, but they can be analysed and clarified with the help of different analytical tools, such as the continuum between the acts of purification and hybridisation.

From the social scientific point of view, there are some noteworthy implications in addition to how people ascribe meaning to domestic technology. First, this research has shown how the scope and results change when the starting point in the analysis is the couple, not an individual. As we saw, especially in chapter 5, being one part of the couple is a significant component of the meaning-making pursued in the domestic area. I suspect that the results could have been different had I not interviewed both parties of the couple, because with this method, it was possible to notice the on-going domestic negotiations people perform in order to locate and use devices so that every family member is content. Given that I interviewed couples, the method also succeeded in revealing some gender differences in terms of giving meaning to domestic appliances. With this in mind, it would be interesting to really put one's teeth into the relationship between the couple and further investigate how such an approach could be used in other research settings, and whether it would be possible to create a "theory of couplehood".

Second, I would like to stress the role of emotions in the practices of everyday life and in the material culture behind closed doors. Chapter 6 demonstrated how

emotions are a significant part of using and understanding technological objects, which is a rare perspective in many sociological studies. As I presented in chapter 2, emotions are usually described through the need or desire in terms of consumer objects, but the basic emotions, such as joy, irritation and anger, are belittled or completely missed out. It might be that this kind of restricted view on emotions and consumer objects stems from the same source within the academic field as people in general. As I argued in chapter 6, there is a feeling rule of no feelings when ascribing meaning to domestic technology, and this means that the purification of technology prevents people from mixing emotions with technical objects. Nevertheless, the interviewees eventually started to discuss cases where emotions were involved in the everyday practices concerning the devices. All in all, the lack of or the restricted view on emotions is a considerable flaw in material culture studies, and the role of emotions should receive more attention in social scientific research in the future⁵¹.

Third, I would like to point out what this study means in terms of practices. I have shown how mental and practical practices steer the meaning-making of domestic technology. The purification is the most important practice regarding domestic gadgets. As argued, it was seen in verbal accounts about “the right order” of technology and people, and sometimes it was also manifested in practical settings as the interviewees tried to place all the devices so that they posed no threat to the essence of home and the social relationships at home. Further, as we have seen, practices in terms of domestic technology are largely dependent on other people at home and within the close social circle, especially the partner, children and parents. To continue, different practices with technical devices bring out different emotional responses, and these could be said to describe the emotioned and performative contexts of practices in the home.

Despite revealing such practices, the data of the study might not be best suited for contemplating all types of practices domestic technologies may entail. Such verbal data mostly unveils what has been said and how the interviewees themselves express

⁵¹ In consumer culture studies, emotions have been acknowledged more widely than in material culture studies. Consumer culture studies have commonly adopted an “experiential” perspective toward consuming, meaning a view that “focuses on symbolic, hedonic, and esthetic nature of consumption” (Holbrook & Hirschman 1982). Moreover, anxiety has been discussed in various other contexts (for example Illouz 2009, Woodward 2006, Warde 1994).

their conceptions about the issue in question. Put differently, we would need more actual and detailed data about what really happens in households and how people use domestic technology. Yet, the interview data is by no means useless in shedding light on domestic practices, because by interviewing it has been possible to highlight the meaning-making which combines subjective elements with a wider social and cultural structure and context. Nonetheless, I would argue that other type of data – maybe a live recording – could better bring out different ideas about domestic practices from the subjective accounts discussed in this study.

7.3 Designing the Future – The Case of Smart Homes

In addition to expanding the social scientific cognisance about material and technological culture, another rationale for the need for this research lies in the design of technology. There is plenty of critique of modern technology in social sciences, but what bothers me is the lack of practical proposals for improvement. Naturally, criticism might be the beginning of something new, but I argue that scholars in social sciences should also be able to convert their points of view in such a way that they could be utilised in the design of technology. In this last part of the study, I try to answer the third research question about how to use such social scientific knowledge in the design of future domestic technology, and my example is smart domestic technology.

The third theme discussed in the research interviews was the smart home. However, I do not analyse the answers of the respondents in more detail here because the most important issue related to the design of future lies in the continuum between purification and hybridisation. Overall, all the interviewees had heard of smart technology, usually via the media, and more importantly, all of them were critical toward it. Moreover, their criticism was clearly purificative in nature, as their largest worries in terms of smart appliances and smart home were: the questions of agency and control, high cost, unknown effects on people and domestic life, and questionable reliability of automated technology.

It has been stated that “[t]oo often technological developments are introduced because they are available, not because they are needed” (Mick & Fournier 1998,

141, see also Patel & Pearson 2002). In other words, technology – not people and their needs – has been the main motivator for developing new appliances for homes. To challenge this trend, I suggest that the findings of social sciences could be taken advantage of and converged for use in technology design. As Patel & Pearson (2002, 108) claim: “One reason why we have not yet reached our utopian future home is that instead of taking a broad, multidisciplinary approach, developers often take narrow, single discipline, mutually exclusive paths.” In addition, Røpke (2001, 420) points out that

The households are certainly ready to try the new technologies and to use them for the tasks they can think of, but more profound changes presuppose that the technologies can interplay with the main social themes for households, and in this respect ‘the intelligent home’ seems inadequate.

If people’s needs of and views on current domestic technologies were understood better, it would be possible to design appliances that actually enhanced the feeling of home and social relationships and assisted everyday life. In the words of Lie (2006, 169): “Whether a particular technology is considered interesting and accessible or not, is dependent not only on how it is designed, but also on how it is presented to users and interpreted by them.” In line with Lie, I argue that when we know how the users interpret current domestic appliances, we will have better opportunities to create new domestic technology that acknowledges the users’ needs and wishes. As Pantzar (2000, 228) writes: “People do not buy technology that does not fit their world view and values.” In addition, the designers of technology tend to be more interested in the future than in the present (Tolmie & Crabtree 2008, 641). Moreover, Tolmie & Crabtree (*Ibid.*) note that “research deployments are designed for a wide range of exploratory purposes, and are usually intended to open up possible futures, rather than meet current needs”.

In the following, I introduce the term of smart home and present some important points of this study that might be used to inform the design of future domestic technology. In the end, I aim to combine these diverse views and suggest the kind of design that might benefit from the social scientific knowledge on technology and domesticity.

What Is a Smart Home?

Smart homes and smart technology have received plenty of attention among engineers and human-computer interaction (HCI) scholars in recent decades. Despite a long developmental history and promising visions, smart homes have failed in more general marketing. This failure is said to stem from insufficient user-centredness in the development process, micro-level and non-laboratory based research being especially rare (Aldrich 2003, Crabtree & Rodden 2004, Gann et al. 1999, Harper 2003). In spite of this criticism, smart home technology is continually being developed, with a great deal of money invested in the design.

The term "smart home" was first launched by the American Association of House Builders in 1984 (Harper 2003, 1). Aldrich (2003, 21) and Harper (2003, 1) argue that the idea of smart home dates back at least to the 1960s when enthusiastic hobbyists built them. Lynn Spigel (2001), however, traces the development of technology-filled domestic areas as far as to the 1930s when "homes of tomorrow" were introduced and displayed at fairs and department stores in the United States.

The concept of "smart home" cannot be clearly and unanimously defined. As Aldrich (2003, 33, see also Randall 2003) states, "there are no industry standards governing use of the term smart home and it is applied very loosely – to anything from a home with a closed-circuit television security system to a ground-breaking demonstration house". Nevertheless, every definition shares the notion that smart homes contain interactive technology and automated functions in domestic environments, at least at some level. Poland et al. (2011, 259), whose smart home research focuses on assistive health applications, offer a definition of smart home:

Smart homes are environments facilitated with technology that act in a protective and proactive function to assist an inhabitant in managing their daily lives specific to their individual needs. A typical smart home implementation would include sensors and actuators to detect changes in status and to initiate beneficial intervention.

Despite the promises of an easier home life, smart home technology is not a widespread phenomenon among households (Barlow & Venables 2003, Gann et al. 1999). Currently, only a handful of wealthy people live in a smart domestic environment, with Bill Gates as their best-known example (Spigel 2001). What are

the obstacles which prevent smart homes from spreading, then? Several reasons for the smart home market failure can be found in the study of Gann et al. (1999). First, the dependence on old housing stock in Europe makes the new technology hard to install. Second, there is no common protocol in smart devices and systems. Having said that, this may be solved in the near future; even now markets can provide some small-scale home boxes which are able to deal with different protocols. The third reason for the slow introduction of smart houses is their relatively high cost. In addition, usability cannot be guaranteed, mainly because the technology has not been properly evaluated from the perspective of the users. These problems lead to the final reason, which is the "technology push" coming from the developers and suppliers.

HCI is an academic field concentrating on the interaction between computers and users, which has produced several studies concerning different aspects of smart homes. Naturally, the focus on technical evolution is one part of the smart home research conducted in HCI, but not the only view: there are also studies that come closer to social scientific views. To understand how far social sciences and HCI still are from each other, their different focuses in research should be noted. To begin with, in HCI there are studies concentrating on the general accounts of ubiquitous computing⁵² (Ubicomp) and ambient intelligence (AmI)⁵³. Second, there is HCI-based research conducted in smart living laboratories and prototypes, focusing on the user requirements⁵⁴. Third, the smart home innovations are contemplated in terms of special need groups, such as the elderly⁵⁵. Fourth, some smart home studies in HCI concentrate on the existing domestic appliances and their use. These include

⁵² Ubiquitous computing (Ubicomp) was first introduced by Mark Weiser (1991). It is a vision deriving from the idea of non-intrusiveness. In other words, technology and appliances are situated everywhere but in such a way as not to bother the residents. The tasks of users and life in general do not distract from this computing type because users do not have to concentrate on a particular computer interface. Communication with Ubicomp is more intuitive and natural, leaning for example on tangible and voice-based interfaces. Another term with the same meaning as Ubicomp is ambient intelligence. Whereas Ubicomp is more used in the USA and Japan, AmI is more familiar in Europe. (Punie 2005.)

⁵³ Weiser 1991, Edwards & Grinter 2001, Petersen 2004, Tolmie et al. 2003, Mäyrä et al. 2005.

⁵⁴ Intille 2002, Kid et al. 1999, Koskela & Väänänen-Vainio-Mattila 2004, Gann et al. 1999, Kinder 2000, Randall 2003.

⁵⁵ Blythe et al. 2005, Chan et al. 2009, Cheverst et al. 2003, Demiris et al. 2004 Dewsbury et al. 2004, Gann et al. 1999, Rogers & Mynatt 2003, Raad & Yang 2009.

research on computer⁵⁶, television⁵⁷, television-related appliances such as VCR and Set-Top-Box⁵⁸, while some studies concentrate on the domestic technologies in general⁵⁹. Finally, there are studies on the notion of home and everyday life, which is the approach that comes closest to the qualitative social scientific one⁶⁰.

By contrast, the social scientific analyses of smart homes mainly focus on the general criticism of ubiquitous computing (Punie 2005), the problematic relationship with the world outside homes (Spigel 2001, Allen 2004), the too-active nature of smart living (Spigel 2001, Pantzar & Oksanen-Särelä 2001), women's traditional or totally absent role in smart homes (Spigel 2001;2005, Berg 1999, Long 2005), and the discriminatory human image in the smart home visions (Spigel 2001;2005, Pantzar & Oksanen-Särelä 2001).

Social scientific analyses usually take a strictly critical view to smart homes by contemplating the visions and advertisements of future housing. However, visions and advertisements are only one part of the smart home development, and there are other aspects to concentrate on as well, for example, existing prototypes and design procedures. Drawing on the social scientific research literature on smart homes, one could almost discern a "norm of criticism" whereby the view of smart homes is mainly postulated as negative and theory-based, rather than empirically attested (see also Pantzar 2000, 214). To some extent, theories and purely analytical approaches provide insightful views on smart homes, and user-centred smart home design certainly needs such methods, but this standpoint should not be the only one. Along with their analytical nature, social sciences also emphasise the democratic features of information technologies. Obviously, this is important to keep in mind and justified by the danger of a digital divide. Nevertheless, it is debatable whether democracy is the most essential criterion in developing smart homes, at least as long as the appliances remain so expensive that only the most well-off are able to afford them. In the words of Pantzar (2000, 230): "Digital technology offers hardly any relief to

⁵⁶ Brown et al. 2006, Kraut et al. 1998, Venkatesh 1996; 2001, Vitalari et al. 1985.

⁵⁷ Petersen et al. 2002, Taylor & Harper 2003.

⁵⁸ O'Brien et al. 1999, Rode et al. 2005.

⁵⁹ Blythe & Monk 2002, Hughes et al. 1998, O'Brien & Rodden 1997, Soronen & Sotamaa 2005.

⁶⁰ Crabtree et al. 2003, Crabtree & Rodden 2004.

the everyday life of impoverished people. (...) In the utopias of digital age, poor people are left on the other side of the intelligent door and surveillance cameras.”

7.4 Purification and Hybridisation in terms of Smart Home Design

I have argued that the norms of purification and hybridisation are at the core of all meaning-making in terms of domestic appliances. What could this mean for the smart home design, then? First of all, this argument directs attention to the invisibility and level of automation of technology in homes. As we have seen, the most important feature of domestic technology is that it should be under control. In line with the notion of purification, the users should be able to think and feel that they master the domestic appliances. Total automation (and therefore invisibility) clashes with the idea of purification as it denotes that technologies live their own lives and are not controlled by the users, but the users are controlled by technologies. In other words, how is it possible to control something that functions without a master? Given the fear of the technological unknown and technological dominance, it can be argued that the more automated the domestic technology is, the more people are afraid of it, or at least react to it suspiciously. Gaul & Ziefle (2009) study the acceptance and evaluation of healthcare technologies and report about their respondents that “[t]he primary fear or sorrow referred to feeling of constantly being controlled and even manipulated by technology or others” (*Ibid.*, 325). This sentiment is very similar to the accounts of purification and represents people’s views on ubiquitous domestic technology in general.

In addition, as Spigel (2005) emphasises, intelligent agents in smart systems become more like humans, while people have to take the role of being "thing-like". Once again, this is incompatible with the purification where sociality and people are considered more valuable than technical appliances. Jokinen (2005, 376) points out that whereas formerly the computers were seen as tools, the present day computer is like an equal agent communicating with humans. This is also related to the findings of Gaul & Ziefle (2009), as one of their survey respondents wrote about the healthcare technology that “if I would use this device, I would not feel human anymore” (*Ibid.*, 325). This is an account that should be taken very seriously because

it highlights the core of purification and manifests the order of things and people: people always come first, and technical devices should come second, no matter what the case.

However, the human-computer dialogue still remains quite one-sided: the most usual way to communicate with a machine is through a mouse and a keyboard. This kind of user interface makes it possible to control and manipulate the system, and the computer is more like a medium, not an actor. The scientists in human-computer interaction promise a different kind of – and more natural – future. The idea of a perceptual interface, for instance, means that in the future people can interact with computers in a more humane way, using such cognitive and perceptual abilities as vision, touch and argumentation. Although these visions may sound thrilling, the truth can also turn out worse. Especially the term "natural" may cause problems (Jokinen 2005, 377). Jokinen (*Ibid.*) rightly criticises that naturalness often "remains an ambiguous attribute with positive loading, but underestimates human capacity to adapt to new situations and learn to function with new interface models"⁶¹.

I do not, thus, recommend smart homes that retain total automation and invisibility of technological systems and appliances. Rather, I suggest smart domestic appliances whose material outlook is designed to be as simple as possible and to take into consideration the context of home. Users think that domestic devices are hard to place in the home and are at odds with the essence of home, but total automation is not a choice because the users tend to purify domestic technologies. The usual opinion was that domestic appliances are "ugly as hell", and they were described as "undesigned, black boxes". This is, one could argue, the current state of aesthetics in terms of domestic devices. As Leddy (2004, 8) notes about the aesthetics of everyday life: "We should not forget the other side of aesthetics: the feeling of displeasure that arises in connection with the sensuous/ imaginative apprehension of certain things."

Domestic appliances could also be designed softer and more stylish; they do not have to look like appliances that we are used to seeing. To balance the association of technology with cold and rational, people in my data preferred gadgets that would

⁶¹ Translated from Finnish into English by IA.

be "soft", "round-cornered", "small", and "colourful". However, they also remarked that such aesthetic design of technological objects is annoyingly rare in the markets. This is something that needs to be taken seriously because consumer culture – to which domestic technology also belongs – is increasingly becoming a visual culture (Schroeder 2002). In the same vein, “the movement toward aestheticization becomes stronger and more compelling” (Venkatesh & Meamber 2008, 58).

Aesthetics is a point of view that has received a large amount of academic interest within design and consuming in general (see, for example, Crilly et al. 2004, MacDonald 2001, Veryzer 1993), but the design of domestic technology does not commonly address aesthetic appearance. Admittedly, some designers of technological objects have recognised the importance of aesthetics, particularly from the angle of consumption and marketing (see, for example, Charters 2006, Hoyer & Stokburger-Sauer 2012). In HCI, for example, Tractinsky (1997) links aesthetics with usability and detects that this correlation depends on the cultural context. Further, aesthetics has been under scrutiny in terms of sustainable development and saving energy (for example Backlund et al. 2006, Ernevi et al. 2005). There are also some insightful remarks on aesthetics and “electronic products” (Dunne 1999), and recently, the designers of ambient intelligence have discerned the aspect of aesthetics (Röcker et al. 2012). However, it seems to me that aesthetics is still commonly registered in terms of designing user-interfaces for computing, but not technical domestic objects per se. In that field, research and short comments are found, for example, on educational technology (Parrish 2009), computing in general (Fishwick 2006), working environment and ergonomics (Liu 2003), designing interactive systems in general (Petersen et al. 2004), and interactive product behaviour (Ross & Wensveen 2010).

Another problem in smart home visions can be found in the human image they portray and in the users they target. As I have already argued in this study, smart home technology is currently very expensive and limited to the wealthiest people. However, this is not the only issue, as the prices of technical solutions tend to decrease if their production increases or they become more common. Pantzar (2000, 203-221) investigates the human image of the future visions pursued in the USA and concludes that they present a very homogeneous and stereotypical image of the smart technology user. For example, it is assumed that the users automatically accept

the innovations in their everyday life and are able to transform themselves according to the new devices, continuously learning and adjusting to the new (Ibid., 204).

On the strength of my research data, this is not going to happen. People are not that flexible in terms of domestic technology, and given the norm of purification, I suspect that they are not even going to be, at least in the near future. In addition, many groups are completely missing in the visions Pantzar discusses. As he (Ibid.) asks: "Where are, for example, those whose attitude toward technology is critical? What about those who remain indifferent, or those who are unable to use the home security systems? Where are the passive consumers, who want to stay outside of interactivity and sociality?" To continue, children and the elderly are also rare in smart home visions, except in those marketing assistive and health technology for the elderly. In other words, the users of technology are diverse. Even if this research has shown that there are collective mindsets and practices in terms of domestic technology, this is not to say that I here portray all technology users. To know what kinds of technology users (or non-users) the designers are concerned with, it might be worthwhile becoming acquainted with the research that addresses those other groups of people and different attitudes toward technology (for example Eastman & Iyer 2004 about the elderly and Internet, and Selwyn 2003; 2006 about non-users of technology).

Nevertheless, the current smart home design is able to offer some usable solutions to present problems with domestic appliances. First, smartness that means wireless domestic applications is, in my mind, more than welcome as multiple cables irritate people. In many cases, people depend upon the existing wall sockets, and given the many devices, the cabling is experienced as laborious and unaesthetic. To continue, the researchers in HCI and technology design have understood the importance of sociality (for example Dryer et al. 1999, Picard & Wexelblat 2002), and many applications have been engineered to enhance the sociality of the family and contacts with the outside world (for example Hindus et al. 2001, Kim & Zimmerman 2006, Terrenghi et al. 2007, Vetere et al. 2005).

Having said that, the enhancement of sociality should not be rigid or the only aim, as the danger lies in "forced sociality". As we have seen in this study, the home is, and should be, the place that offers the occupants peace and space for relaxation.

Hence, smart applications should also respect this need for intimate privacy. This is especially important when smart innovations are designed to heighten up the connection between the home and the outside world, as sometimes the home represents the only place in the world where people can be alone or just in the company of their family members.

This leads us to purification and the essence of home. As concluded in chapter 4, the act of purification is also used to maintain the feeling of home, as domestic appliances are seen to threaten the domestic atmosphere (this could be seen, for example, in the placing of devices). The home is, and should be, the starting point and the most constituent context when designing domestic appliances (whether they are smart or not), but for some reason the notion of home is not very visible in the research and design in HCI. Put differently, there is a clear "deficit of home" in smart home design and research conducted in HCI. Technology is made to be used in homes, but there is no subtle understanding of what home means and what elements homes are constituted of. As I wrote on pages 97-98 of this research: "Modern technologies permeate our homes in many ways, which is seen as threatening the essence of the home environment. Being able to control the home, in other words, decide how to decorate it and who is permitted to enter it, is one of the most important dimensions of the home, but technologies are seen to break this control." This is among the most noteworthy lessons of this study and should be recognised by the designers of novel domestic technology. Designers could try to design devices that do not pose a threat to the home. For example, very old technology and design objects were mentioned as lessening this threat, and this stance could be the one to consider in the design of the new.

In addition, new innovations should compromise the home environment as little as possible. This means that the change caused by the introduction of new gadgets should be very small, so that they settle as a flexible part of the home both in the residents' minds and in the material surroundings of the home (Pantz 2000, 49). In other words, a complete smart home sounds too drastic a change compared to today's home. Single apparatuses, in turn, might be more easily adopted, especially if they easily blend in with the older devices and allow users to feel they are controlling the technology.

This “need for home” is already detected in HCI (for example Bell et al. 2003, Brush et al. 2005, Hindus 1999, Howard et al. 2007, Tolmie & Crabtree 2008), and there are some studies that have concentrated on ethnographically informed ways of understanding home as a special environment (for example Zafiroglu & Chang 2007). Despite this, most researchers at the beginning of their work acknowledge the notion of home by briefly listing some of its positive qualities, including privacy, security, family, intimacy, comfort, and control (as in Blythe & Monk 2002, Eggen et al. 2003). Although these lists could direct designers’ attention to the special attributes of homes, they do not tell the whole truth (see the notion of home in chapter 2). The notion of home is a more complex issue concerning, for example, conflicts, cultural norms, and the more extended living environments to which it is related, for example, certain districts of the city or the more abstract social circle in which people operate (see, for example, Manzo 2003, Taylor & Brower 1985). The margins and borders of homes, such as sheds in the gardens, have also proved to be a useful means of understanding domestic environments (Bell & Dourish 2007). It is striking that there is a great deal of literature concerning home in the social sciences, but for some reason smart home studies have not taken advantage of it. This literature should be investigated so as to inform designers about the special qualities of home.

One reason for this shortcoming could stem from the influence of the industrial mindset in the background of many devices. The use of several relatively recent innovations, for instance the computer and the mobile phone, has been justified by their instrumental value and their utilisation in educative and work-related purposes (Pantzar 2000, 118). This clashes with the essence of home, and as we have seen in this study, people struggle to incorporate work-related gadgets into their homes. As Pantzar (*Ibid.*) rightly points out, there is “(...) a tension between the views of producers and users: in the end, home is not an enterprise”. Moreover, in HCI, ethnography is commonly used for gathering data in work-related settings, which affects how ethnography has been understood and used (this is discussed in more detail in Crabtree et al. 2009).

In addition to the absence of the notion of home, different users (or non-users) of technology and the question of the invisibility of future domestic technology, the role of emotions is yet another problematic issue when designing smart appliances.

I argued in chapter 6 that there is a general principle, "the feeling rule of no feelings", in terms of domestic appliances, and this cultural rule is a part of the process of purification where the users try to master the devices. However, emotions are very much present when people interact with domestic appliances, having a major role in what is considered a fluent and pleasant experience with some domestic device. This is quite a broad question, and in the following, I will consider how the HCI scholars have approached emotions and how that relates to the social scientific viewpoint.

Emotions are commonly referred to as "affects" and "affective computing" in HCI. Hudlicka (2003, 3) summarises its meaning as:

[R]ecognizing user affect, adapting to the user's affective state, generating 'affective' behavior by the machine, modeling user's affective states, or generating affective states within an agent's cognitive architecture.

There has been a strong tendency to address emotions solely from the cognitive, psychological standpoint in HCI. In other words, emotions are considered the inner qualities of people, and the challenge of the HCI researchers has been to recognise and stimulate the "right kind" of emotion from humans when interacting with computers. Further, the method of doing this has often been informed by clinical psychology and affects have been physiologically measured⁶². For instance, researchers in HCI have gauged psychophysiological measures (such as skin conductance, heart rate, pupil size, respiration and blood volume pressure), speech, and body movement and gestures (Hudlicka 2003, 23-26). Picard (2003, 3) explicates this view by writing that

With emotion, as with weather, one can build sensors for measuring the physical equivalents of temperature, pressure, humidity, etc. One can also build successful algorithms for combining patterns of such measures, and thus recognize the emotional equivalents of a tornado or a blizzard. At this level, I expect emotion recognition to be solvable by machine.

⁶² Some studies in HCI address emotions at the same time quantitatively and qualitatively (for example Desmet et al. 2007). Qualitative, in this case, means using "the product emotion measurement instrument, PrEMO" (Desmet 2003), which is based on animated cartoon characters the participants of the study use to pick an emotion closest to theirs. From the sociological point of view, this is not a qualitative method per se, as emotional responses are restricted and selected beforehand by the researchers.

However, elsewhere Picard (2003, 4) admits that “[t]here’s an old saying in the business world: if you can’t measure you can’t manage it. Affect, like weather, is hard to measure; and like weather, it probably can’t be predicted or controlled with perfect reliability”. In other words, even the HCI researchers themselves have conceded that emotions may be too complex phenomena to entirely cover and manage. Worth highlighting here is Picard’s emphasis on measuring: she implies that the only proper way to focus scientifically on emotions is through measuring.

There have been some introductory comments on how the views on emotions in HCI are too narrow in scope and poorly defined, and it has been admitted that knowledge in affective computing is still in its infancy (for example Axelrod & Hone 2005, 1192; Hudlicka 2003, 28; Zhang & Li 2005, 107-108). Boehner et al. (2007, see also Khalid & Helander 2006) take the criticism of affective computing the furthest analytically and theoretically, and they share my view that emotions are not just psychological and biological, but should also be understood in terms of culture, society and practices. Boehner et al. (*Ibid.*, 275) argue that “while emotion is proposed as a supplement to traditional cognitive accounts (in HCI), it is often nonetheless located within the same information-processing frame” where the heritage lays in laboratory studies and measuring of phenomena. Moreover, they explain how the study of emotion has been altered to suit the concept of hard sciences, that is, “rational, well-defined, and culturally universal” (*Ibid.*, 277; see also Norman 2002, 38). As a result:

[T]hose aspects of emotional experience that do not fit this view of science – that which is not objectively accessible and measurable, that which is personal and idiosyncratic, that which varies over cultures and over time – are left out of discussion.

Boehner et al. (2007) promote an alternative view, the “interactive approach”, based on the premise that emotion is “a social and cultural product experienced through our interactions” (*Ibid.*, 276). This standpoint is also extremely useful in terms of domestic technologies. As I have illustrated in chapter 6, domestic devices generate emotions especially when they are used and when they fail to interact smoothly with the users, and this relates to purification in which technical devices should stay under control. Physiological measurement and ready-made taxonomies in studying emotional responses usually ignore the subjective perception of how one feels. As

Boehner et al. (Ibid., 287) show in an “information based model” on emotions, “the evaluator is set as the final authority on the user’s true emotion” instead of the verbal accounts of how the user her/himself interprets her/his emotions. In addition, these standpoints miss the ambiguity and simultaneous nature of emotions. Emotion may occur as something that is not easily interpreted nor readily detected. It may demand subjective reflection and contain different, sometimes even contradictory feelings that cannot be objectively measured or expressed with simple coding systems (this multilayered and multidimensional meaning of emotions has been detected by Umemuro 2009 in HCI). As in the case of domestic appliances, the object may provide joy and entertainment, but a nanosecond later it may also cause immense irritation.

In the end, it seems that there is a need for a profound revision of the epistemological standpoint in HCI so that the subject of emotion could be more comprehensively addressed in the research. Bochner et al. (2007, 276) validate the benefits of their interactional approach to emotions. First, this method “expands the ontological view of emotions as informational units that are internally constructed” and therefore widens the epistemological standpoint of HCI. Second, the researchers promote that the whole interface changes as the aim is to help “people to understand and experience their own emotions”. In other words, the goal is not that computers should necessarily understand the humans. Finally, the cultural and interactional view on emotions could lead “to new design and evaluation strategies for devices” where the expression of emotion is “co-constructed” and “co-interpreted” by both user and computer. Put differently, “[s]uccess of such a system is measured by whether users find the system’s responses useful for interpreting, reflecting on, and experiencing their emotions” (Ibid., 287). In this way, user and evaluator both interpret and co-construct the results.

This kind of new paradigm is, in my view, highly required and necessary in HCI. This area, however, is not easy to change because of the earlier connotations of emotions, for example. As Bochner et al. (2007, 276) remind us: “Emotion was considered feminine, spiritual, out of control, while the scientific laboratory was a masculine, physically grounded and highly controlled space.” Scientific work in HCI still often rests on the view which investigates the phenomena in laboratory circumstances and approaches its subject from a causal, greatly rational and

straightforward point of view. The role of “female” in the field of HCI is analysed by Picard (1997, x), who writes that: “Being a woman in a field containing mostly men has provided extra incentive to cast off the stereotype of ‘emotional female’ in favor of the logical behavior of a scholar.” Given such configuration and scale of values, it is hardly surprising that emotions are addressed in this manner in HCI. As Boehner et al. (2007) point out, the major change in HCI thus needs to occur in terms of epistemological regimes and how the scientific work is understood and interpreted.

The Gap in Research and Design – A New Paradigm and Collaboration?

The change of regimes and the new paradigm could also be applied to the smart home design and research in HCI and social sciences: it does not concern the affective computing only. As we have seen, HCI takes a technologically oriented position in terms of smart technology, whereas the perspective of social sciences on smart homes stems mainly from the “norm of criticism” and inadequate empiricism. Put differently, there seems to be an intrinsic urge to criticise the visions, and analysis is primarily conducted using abstract concepts and theories. Although HCI as a scientific field has made a positive transition toward social science based methods and user-centred procedures, some of the studies are still overly determined by the technology developed and their lack of user-centredness is apparent. Earlier HCI scholars and engineers had to confront these allegations alone, but I suggest that social scientists could likewise structure their own research to better serve technology design. It could be said that technical design follows the path adopted by researchers designing emotional HCI, as it is based on measurability and causal explanations of science. Social sciences in smart home research, in turn, offer qualitative standpoints and more complex meanings and explanations based on relational meaning-making.

The gap between HCI and social sciences is also obvious in the research deficiencies. Although smart homes have inspired many researchers to contribute to the technological development and analyse the research efforts and visions of others, there are also some areas which suffer from a lack of attention. To begin with, research in HCI should contemplate the differences between intended users. As we have seen in this research, gender, for example, is a factor affecting the process of

making meaning, use and diffusion of new domestic technologies. Gender differences are detected in some studies of HCI (see, for example, Beckwith et al. 2006, Kelleher et al. 2007, Rode et al. 2005), but more profound understanding about the link between gender and technology is not visible in this field⁶³, and so far gender and smart homes in particular are not thoroughly linked. Second, as mentioned already, there is no proper understanding of what home is, what people do in their homes, and how this connects with the meaning-making in terms of domestic technology. Informing smart home designers about the qualities of home would allow the technology to be adjusted to fit this special environment. Third, as also argued earlier, the cultural and social side of emotions could be understood and appreciated more deeply and widely in HCI. Besides this current, narrow perspective on emotions, I believe that the routine activities of the home are too little known, as emotions are particularly prone to emerge in the practical encounters with domestic appliances. Finally, the question of aesthetics should be included in the list of important dimensions of design.

To obtain future domestic appliances appropriate for people's everyday lives and needs, these two perspectives – HCI and social sciences – should be combined and transformed so that they would ensure an integrated view on the relationship between users and technology. What is needed, in practice, is empirical research covering both the technology and the context in which it is used, and what is more, social science based theories and abstract concepts should be made simpler and adjusted to inform the practical design process. Ultimately, this collaboration would benefit both areas and improve the opportunities for creating user-centric smart technology.

I do not want to argue that all research in HCI and cultural studies is weak. On the contrary, scholars in HCI have made considerable progress in smart home development, and there are also some in-depth studies starting from the real users in their home environment (see, for instance, Chetty et al. 2007, Crabtree et al. 2003, Crabtree & Rodden 2004, Grinter et al. 2005, Tolmie et al. 2007, Tolmie & Crabtree

⁶³ The only explicit exceptions are Bardzell (2010) and Rode (2011), who do not focus on the design of smart technology, but on the relationship between gender and HCI in theory and in general.

2008, Tolmie et al. 2010). In addition, there has recently been discussion about the paradigmatic shift in HCI. As Chamberlain et al. (2012, 795) note about researchers in HCI: “We are witnessing researchers leaving the safety and security of their controlled, lab-based environments and moving their research out into ‘the wild.’” In some cases, concentrating simply on the technology is entirely justified, as in designing new forms of information and communication technologies where new technical solutions are needed. What I do want to claim, however, is that in some areas the perspectives are still narrow, and design could be advanced if different views and procedures could be open-mindedly evaluated and accepted into the design process, both in HCI and social sciences.

It is easy to come up with design recommendations, but how should actual, real-life procedures which can tie the technical and social dimensions together be augmented? Far from being an easy question, there is at least one answer that may ease this problem. Aldrich (2003), Norman (1999) and Sommerville et al. (1993) demand that social scientists should take part in the design of future technology. Smart home articles published in the field of HCI reveal that the research is mainly done in computing and informatics departments or technology institutes, and there are only a few scholars representing social science or other academic disciplines. Based on this literature survey, this is not a surprise. As noted already, these two approaches are often too distant, and would require a great deal of work in order to have their methods and procedures complement each other. It is quite reasonable that designers be designers or engineers be engineers – they are not trained to conduct and interpret social scientific field work, nor do they have time to invest in reading long research reports on qualitative research efforts (such as this study)⁶⁴. In short, designers need simple and informative means to draw design implications from ethnographic and social scientific procedures, but in a way that does not hinder the analytical nature of ethnography by treating it just as a practical toolkit for data gathering (Dourish 2006). Having said that, the role of social scientific methods, such as ethnography, is not a simple question, and the use of these methodological actions should be carefully contemplated. As Crabtree et al. (2009, 886) argue:

⁶⁴ However, as Crabtree et al. (2013) have proved, ethnographic research may not have to take years, or even months, to benefit the design of technical appliances.

As design diversifies, we believe it important for the design community to consider the role of ethnography within design, in contrast to its role to within social science. The social sciences do not build systems; they have no practical interest in doing so; and their practices are not designed for the task. What they are designed for is writing ‘culturally approved texts’ or texts which conform to the norms, values and expectations of social science.

This study has been an example of social scientific effort to understand people's relationship with domestic technology. As such, it first and foremost presents sociological knowledge. Yet, this last chapter has been a little reminder of what this type of research could pursue outside the academic comfort zone, that is, outside social and cultural studies. In the future, I hope there will be more room in technology design for this kind of understanding about the world and people, and at the same time I hope that more social scientists will want to share their academic cognisance with engineers and scholars, for example in HCI. Homes are full of domestic innovations and people spend a great amount of time in their lives acting and living with them. Home as a positive mental concept continues to be arguably the most important place in the world for most of the people. The more open we are in academia and technology design for new insights and knowledge, the more satisfying the domestic life with domestic technologies could be. Domestic technology in the future might be something that does not demand active purification, but is effortlessly infiltrated and hybridised into the domestic life and social activities, without anyone feeling threatened because of faceless and dominant technology. As Woodward (2012, 690) argues about objects and material culture in general: “Good things satisfy and give pleasure. Bad things generate anxiety, contaminate, and offend.” The home – smart or not – is a special place for people and users of domestic devices, and nobody wants to live in a contaminated home.

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