Gwen Bingle, Heike Weber
designing.users@mzwtg.mwn.de

Mass Consumption and Usage of 20th Century Technologies - a Literature Review

Draft – please do not quote without permission! Latest update: 08/16/2002

1. Fascination for consumption: hip, hype or a new Weltanschauung? 1

2. Perspectives and key-terms for 20th century technological consumption 3
2.1. Consumption perspectives in various disciplines 3
2.2. Key-terms in the field of consumption 7

3. Focusing on the act of consuming 9
3.1. Commodities, practices, and meanings 9
3.2. Materiality as a source of and for meaning? 15
3.3. Appropriation and domestication 17
3.4. Normalisation or how wants become needs 22

4. Bridging the gap between production and consumption 25
4.1. User representations, frames and scripts 25
4.2. Mediation through retailing, marketing, advertising etc. 30

5. Controversial agency 34
5.1. Actors and agents: mapping the politics of consumption 34
5.2. Consumption of technology and the user: shaping, construction, subversive use or co-production? 35
5.3. Gender analysis makes power negotiations visible 42

Bibliography 53

1. Fascination for consumption: hip, hype or a new Weltanschauung?

They seem to be everywhere: in the arts section of respectable newspapers and glossy magazines, in TV programmes, or as the main focus of countless exhibitions. The mass produced artefacts of 20th century technology seem to have become our faithful companions both in everyday life and imagination. Thus this contemporary fascination for recounting the stories of objects shouldn't really surprise us. It could also be that the anxiety generated by the reflexive modern stance means that even the most trivial everyday objects such as zippers, paper clips or tupperwares, provide concrete, tangible anchors to an obsolete modernist faith in material security. Or is the fascination for consumption simply another facet of post-modern marketing hype?

At any rate, during the last two decades, consumption has developed into a main research field that spans many disciplines within academia. The recent blossoming of literature generated in this transdisciplinary field is therefore the focus of our literature review.

In that respect, we, as authors of this review, also subscribe to the trend of bringing **artefacts** and – to a lesser extent - **services** as well as their **usage** to the fore. Our aim is to present relevant literature from the past decade that emphasises the "user of technology" perspective as well as the interaction between consumption and production. Since we cannot take up the whole discussion on consumption with its long tradition, this review will take up some of the latest debates around consumption and technology and will try to systemize the ideas that have been suggested. Thus the literature presented should provide new insights into a history of technology which until now has mainly been concerned with histories of production. With this selection we would therefore like to provide an impulse for the **bridging of the existing gap between those histories focused on consumption and those centred on production**. Hence, the literature review foregrounds studies on the relationship between users and the artefacts/technologies they consume (Chap. 3: Focusing on the act of consuming), the links and channels between producers and consumers (Chap. 4: Bridging the gap between production and consumption) and the negotiation of power between all the agents engaged in the process of consumption (Chap. 5: Controversial agency). The studies we review are thus thematically rather than chronologically grouped. Since, given the extent of the field, we could not aim at all-inclusiveness, we decided to concentrate on studies that promised **methodological insights** and **theoretical inputs** which we found helpful in linking historical and non-historical perspectives on consumption. Thus descriptive-empirical studies have only been marginally mentioned.

The literature discussed thus mainly stems from the European – particularly German - and American debate over consumption. It should also be emphasised that the studies examined - and hence our review of them - almost self-evidently focus on the **private consumption**[1] of the so-called western consumer societies. This orientation rooted in western academia seems to have gathered impetus due to the decline of socialist states, entailing that collective consumption hardly seems to present a major alternative to capitalist individualistic lifestyles any longer and that this particular form of consumption now rarely attracts the attention of researchers. Consequently, collective consumption is only fleetingly mentioned as a dimension of e.g. transportation networks, communal/ neighbourly facilities, or media consumption.[2] Both collective and private consumption include the notion of choice, and we suggest distinguishing collective consumption from e.g. welfare or defence consumption, since the latter does not really provide consumers with a choice. Most of the current literature uses the term „consumption" taking for granted that it is individual consumption which is being described and analysed and unfortunately, this assumption has never really been thematised until now. Nevertheless, a few analyses of consumption in socialist economies have been published.[3] These studies could lead towards a critical reflection on the

[1] or micro/peer-group consumption. Cf. e.g. Nicolas, Blandine, « A l'appel du tam tam… », *Objet Banal, Objet Social : Les objets quotidiens comme révélateurs des relations sociales*, Eds Isabelle Garabuan-Moussaoui & Dominique Desjeux, Paris : L'Harmattan, 2000, a study that examines the consumption of a brand of pagers in France, within a group of 18-25 year-olds.

[2] In the first half of the 20th century, collective non-public consumption was often based on the model of the so-called „one-kitchen-house" which had mainly been propagated by socialists at the beginning of the century. In the countryside especially, collective facilities proved extremely important for electrification, cf. for the case of southwest Germany: Krieg, Beate: „Landfrau, so geht's leichter!" Modernisierung durch hauswirtschaftliche Gemeinschaftsanlagen mit Elektrogroßgeräten im deutschen Südwesten 1930-1970. München 1996.

[3] For more inputs on consumption in the GDR see: Merkel, Ina: Utopie und Bedürfnis. Die Geschichte der Konsumkultur in der DDR. Köln, Weimar, Berlin 1999. In the first part, the economic basis for mass production and the discourses of and dialogue between State and consumer are discussed; the second part deals with the retailing and presentation of commodities; the third and last part is centred on the dimension of usage. Merkel's research mainly focuses on the 1950s and 60s. For a more recent introduction on consumption in the GDR, cf. Kaminsky, Annette, Wohlstand, Schönheit, Glück. Kleine Konsumgeschichte der DDR. München 2001.

appropriation of the term 'consumption'. However, in most cases, these analyses often take western consumption standards as a point of reference for comparison.

Summed up, the following features characterise the literature examined here. First of all the focus is mainly on leading technologies of the 20th century such as the telephone or the car, and more recently the computer. In historical studies there is a heavy emphasis on household technologies whilst more contemporary ones tend to concentrate on ICT. In all these studies, the consumer is seen as active, using and adapting artefacts according to her/his wishes and potentially influencing production. In media studies, this perspective is connected to the general shift away from the perception of a passive "media junkie" to what is seen as an active selector, and in technology studies, to the shift away from technological determinism to the social shaping of technology. Instead of the one-way „diffusion" of a technology to consumers, its „creative appropriation" is being researched, and mutual negotiation and mediation processes between producers and consumers are emphasised. Users' agency is focused upon in regard to two dimensions: their (or individually her/his) active and creative consumption and their influence on the shaping of technology.

Before turning to individual studies we will, in Chapter 2, sketch the different approaches of various disciplines, providing a short overview of their general development in relation to the phenomenon of consumption and discuss those terms that we see as central for the theme of 20th century technological consumption.

2. Perspectives and key-terms for 20th century technological consumption

2.1. Consumption perspectives in various disciplines

Consumption as a social phenomenon of the 20th century has meanwhile gained a huge contemporary academic interest,[4] and recently, a number of new journals have been founded (e.g. „Journal of Consumer Culture", „Journal of Material Culture", etc.). Even if today, consumption studies cross and question disciplinary boundaries, different emphases and approaches have developed within the various disciplines. The most prominent among these (economics, social sciences, the wide field of cultural studies, history) will be presented in the following.

Economics deals with the allocation of resources, i.e. the flows of money and goods, thus usually leaving out questions such as the origin of needs/wants and the actual use or appropriation of artefacts and services. Economics deals with markets and sectors. The focus of its research does not go beyond the point where products leave the market: any practices taking place after that are ignored and do not obey economic rules. In most cases, as far as the purchasing decisions are concerned, the rational consumer entity is taken for granted. The "**homo oeconomicus**" was thus conceived of as solely preoccupied with the satisfaction of as many needs as possible and a majority of economists do not question the notion of unlimited

---

Kaminsky thematises the popular dissatisfaction with the consumption offer in the GDR and how this phenomenon lead to social unrest. A short version is available at: http://www.thueringen.de/de/lzt/histor/content.html

For consumption linked to interior design and architecture in the Soviet Union, cf. the special issue of Journal of Design History, vol. 10, Nr 2, 1997 (Special issue: „Design, Stalin and the Thaw").

[4] For a still very useful overview of relevant perspectives and literature of several disciplines cf. Miller, Daniel (ed.): Acknowledging Consumption. A Review of New Studies. London, New York 1995. The articles demonstrate that, since the 1980s and in nearly every academic discipline, research on consumption has emerged as a salient sub-theme.

wants and utility maximization. However, recent developments in institutional and evolutionary economics configure the consumer as being a satisfycing rather than a maximising agent.

The underlying assumption for the motivation of consumption was (and still is) mainly the classic model of the hierarchy of wants as established by the psychologist ***Abraham Maslow*** (1954). In this triangular model, basic survival needs are the foundation, followed by safety wants, social wants, esteem wants and forming the tip of the pyramid, the want for self-actualisation. Needs, in contrast to wants, often were/are defined as entailing inherent levels of saturation whereas wants when fulfilled, are seen as fuelling ever increasing levels of aspiration in the consumer.
However a few economists have been engaging with questions of human behaviour, motivation, or the aspiration for comfort. ***Gary Becker*** developed a sophisticated economic theory of human behaviour, and in his writings, the purchasing decision "transforms the family from a passive maximizer of the utility from market purchases into an active maximizer also engaged in extensive production and investment activities.[5] ***Tibor Skitovsky***, in his „Joyless economy", links behavioural psychology with economic thought. He questioned the extant meanings ascribed to *needs*, *wants*, *useful* and *useless*, by, among other emphases, stressing the "usefulness of the useless activity" und the correlations between pleasure und comfort.[6] Comfort functionally eliminates need, whilst pleasure acts as a stimulant and brings gratification, since something more than the necessary has been attained. Furthermore, every human being and every society has its own in-built level of stimulation and satisfaction of needs. Within the context of the American way of life, Skitovsky saw the "Joyless economy" as permeating the American consumer culture in the sense that it mainly produced goods designed to satisfy an aspiration to comfort, whereas European culture allowed for forms of pleasure, refinement, and non-functional consumption.

Social sciences analyses consumption in terms of its socially organising and/or stabilising functions. Its main perspective on consumption is thus the **social distinction** created by groups and classes through their consumption - a notion that can be found in the works of early thinkers all the way up to ***Bourdieu***. Both ***Simmel*** and ***Veblen***, describing the emergence of modern consumer culture in the beginning of the century, interpreted fashions as forms of social equalisation and discrimination, and saw consumption behaviours and patterns as trickling down from the richer to the poorer classes. This movement then was supposed to provide a continuous process of novelty, differentiation and imitation. Thus until recently, sociology mainly studied **conspicuous consumption**, which was seen as the only form of consumption enabling social climbing. Bourdieu further linked the concept of „distinction" with the very elaborate theory of the „**habitus**" and thus exercised a considerable influence on consumption theories in the 1980s.[7] Post-modern thinkers have also drawn attention back to the dimension of **identity construction** as a major function of consumption.

The **communicative function** of consumption has however mainly been researched by the fields of ethnology and anthropology, with later additions from cultural studies. The wide reception of ethnographic studies and structural analysis (e.g. Mauss on the "gift" and some of Levi-Strauss's works) since the 60s and 70s, and the growing impact of reflections on western

[5] Cf.: Stigler, G.; Becker, G.: „De gustibus non est disputandum". In : American Economic Review 67/2 (1977), pp. 76-90 (here p. 77).
[6] Skitovsky, Tibor: the Joyless Economy. The Psychology of Human Satisfaction. Oxford 1992 (revised edition).
[7] Cf.: Bourdieu, Pierre: Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft. Frankfurt 1998 (French edition: 1979).

commodities by French intellectuals such as ***Barthes*** and ***Baudrillard***, means that ordinary consumption and everyday relations to objects has meanwhile become a respectable research field in nearly every academic discipline. Also, it has, ever since, lead to a **broader definition of the term "culture"** and a more **semiotic approach** to the understanding of culture has gradually set in.

Ethnology, as a cultural sociology of foreign peoples/ communities, and **anthropology**, which focuses on the human being as such, have traditionally paid more attention to the materiality of goods and their actual usage but mainly focused on non-western cultures. During the last decades –in fact, ever since the post-colonial stance gradually began to question cultural imperialism in most academic fields- both have increasingly concentrated their investigations on the cultures that gave birth to them and have paid attention to consumption, technology and the phenomena of mass/ popular culture. **Early structuralism** tried to research a number of cultural phenomena according to the principles that were developed within the field of linguistics and thus paralleled consumption and language. Barthes' writings on e.g. the fashion system closely followed this structural approach.[8] Using his own concept of "**semiology**", he examined many different objects of western mass consumption and their meanings, thereby disclosing that the strictly instrumental function of products is a myth. Instead, the commodity system uses the structures of mythological thinking. Baudrillard's main credit lays in his valuing of consumption as a „function of production". „**Consumptivity**" is thus the counterpoint of productivity, and consumption can be defined as a form of social labour.[9] In his early writings on objects, signs, and codes in consumer society, he tried to synthesize a Marxian critique of political economy with semiology. For Baudrillard, material culture finally and exclusively consists of **signs** that are generated by advertisements and other discourses. The functional meaning of commodities is therefore negated, and "need", "function", or "usefulness" are uncovered as ideological notions. Meaning can be ascribed to any commodity and thus, a vast system of „hyperreality" evolves, in which signs can even freely float because they are no longer necessarily anchored to an external frame of reference.

During the 80s and under the influence of post-modernism, theories of consumption shifted their emphasis from consumption seen as a corollary of production to consumption as a form of cultural reproduction. In post-modern narratives on consumption especially, commodities are conceptualised as indicators of **lifestyle and identity**.[10] Individual consumption patterns and personal identity are the main focus here – with collective practices barely mentioned. Besides, both post-structuralists and post-modernists give primacy to discourse theory, which sees all social phenomena as structured semiotically by codes and rules. Meaning then is not simply given, but socially constructed: these approaches can thus be seen as variants of **semiotics**.[11]

---

[8] In his „Système de la mode", he used the concepts of syntagm and paradigm to describe fashion. Clothing is thus defined as a system which is structured like language. The paradigmatic axis entails that there are clothes available for particular parts of the body, e.g. the balaclava, bowler hat, baseball cap are all designed as head gear. On the syntagmatic axis, clothes are finally combined into a particular ensemble, after being selected from the alternatives available within the paradigmatic plane. Cf. Barthes, Roland: Die Sprache der Mode. Frankfurt am Main, 1985.

[9] Cf. Baudrillard, Jean: Pour une critique de l'économie politique du signe. Paris 1972.

[10] Cf. Featherstone, Mike: Consumer culture and postmodernism. London 1998, or Lunt, Peter K. and Sonia M. Livingstone: Mass consumption and personal identity : everyday economic experience. Buckingham, 1992.

[11] Meanwhile one can distinguish two approaches within cultural analysis: post-modern writers like Derrida or Kristeva define culture as a „text" whereby the term "text" is very broadly defined: every cultural system can be seen and read as a text. A counterpoint is Foucault's analysis of discourse which is understood in a much narrower sense because it mainly focuses on written texts.

As far as the **historical discipline** is concerned, it underwent some changes in perspective linked to the above-mentioned currents. For instance, in the 90s, the "linguistic turn" anchored the primacy of discourse in historical research. Additionally, other intradisciplinary developments should be mentioned. Gender history and the history of everyday life, together with oral history movements during the 1980s, encouraged a renewed attention to the conditions of everyday life. However, apart from the sub-disciplines just mentioned, history has been focusing less on the practices of usage as such, as on the role of technology(/ies) in a society -particularly once it was widely diffused- and this especially in terms of modernisation processes. Anthologies such as "Europäische Konsumgeschichte" (1997) for European countries and "Getting and Spending" (1998) for Germany and the U.S, as well as the „Sex of things" (1996), which develops a gendered perspective on consumption,[12] provide an overview over the breadth of interests that have recently flourished within the history of consumption. Consumption history increasingly includes the technical dimension -both within the production and the consumption spheres- in its scope. Conversely, **history of technology** -traditionally centred on production- has meanwhile tried to integrate both consumption and production.[13] However, its main emphasis is on the introduction and diffusion phases of a technology, often leaving out dimensions of individual usage.

Within **science and technology studies**, the social construction of technology or **SCOT** approach, as developed by ***Wiebe Bijker***, ***Thomas Hughes*** and ***Trevor Pinch*** among others, aims to show what shapes a technology and explain why an artefact is designed in a specific way. It argues for a social, thus mutual, shaping of technology where producers and consumers negotiate and construct the meanings and forms of a technology.[14] Another valuable insight in this field is ***Ruth Schwartz Cowan***'s concept of the **consumption junction** which she introduced as a consumer-focused analysis in the history of technology.[15] In this model, each consumer is embedded in a web of social relations at a certain point in time and space, within which s/he makes her/his choice/s. If one aims to understand a particular choice one has to reconstruct the pertaining consumption junction and consider the alternatives, the (technical or other) prerequisites for a certain decision, and the many agents influencing the consumer.

Actor-network theory (ANT) as evolved from the work of ***Michel Callon*** (1991) and ***Bruno Latour*** (1992), provides a powerful tool to analyse the processes by which scientific disputes become closed. If this analysis is particularly useful in the context of the making of science and technology, it can also shed light on any socially constituted constellation or network,

---

[12] Cf.: Siegrist, Hannes; Kaelble, Hartmut; Kocka, Jürgen (Hg.): Europäische Konsumgeschichte. Zur Gesellschafts- und Kulturgeschichte des Konsums (18. bis 20. Jahrhunderts). Frankfurt, New York 1997. Strasser, Susan; McGovern, Charles; Judt, Matthias (eds.): Getting and Spending. European and American Consumer Societies in the Twentieth Century. Cambridge 1998. de Grazia, Victoria; Furlough, Ellen (eds.): The Sex of Things. Gender and Consumption in Historical Perspective. Berkeley, 1996.
Cf. also the following literature reviews: Prinz, Michael: Konsum und Konsumgesellschaft seit dem 18. Jahrhundert. Neuere deutsche, englische und amerikanische Literatur. In: Archiv für Sozialgeschichte 41 (2001), pp. 450-514. Roberts, Mary Louise: Gender, Consumption, and Commodity Culture. In: American Historical Review 103 (1998), pp. 817-844.

[13] Cf. for a comprehensive outline of 20th century American and German consumer societies from the perspective of a historian of technology, cf. König, Wolfgang: Geschichte der Konsumgesellschaft. Stuttgart 2000. In this book, König describes consumption linked to what he considers to be fundamental needs in the fields of food, clothing, housing, sexuality and culture (including mobility/mass-tourism, entertainment/pleasure). Processes such as commercialisation, industrialisation, technologisation, growth (both qualitative and quantitative) and individualisation stand in the fore as the most significant factors of change.

[14] For more insights on SCOT, cf. chapter 5.

[15] Cf. Cowan, Ruth Schwartz: The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology. In: Bijker, Wiebe E.; Hughes, Thomas P.; Pinch, Trevor (Eds): The Social Construction of Technological Systems. New Directions in the Sociology and History of Technology. Cambridge (M.A), London 1987, pp. 261-280.

such as the consumption junction. ANT can be seen as a systematic way of bringing out the agency dynamics that is usually left out of the master narratives of consumption history, sociology or anthropology as they link up with scientific and technological developments. ANT's analysis describes the progressive constitution of a network in which both human and non-human actors (in the case of consumption: commodities or services) assume identities according to prevailing strategies of interaction. Actors' identities and qualities are defined during negotiations between representatives of human and non-human "actants". In this perspective, "representation" is understood in its political dimension, as a process of delegation.[16]

After this brief overview of various disciplines and their perspectives on consumption, we would now like to present a short **glossary** of some of the terms we will be using in our review, so as to clarify our position on the various dimensions entailed by the consumption and mediation of technology.

2.2. Key-terms in the field of consumption

"Consumption" in our view is the complex process comprising the selection, purchase and use of a good or service and also includes, in the case of artefacts, maintenance, repair and/or disposal. Therefore, the following terms shed various perspectives on consumption seen as a process. The "**consumer**" stems from the field of economics and refers to the actor selecting and purchasing a good or service that he will not sell to others or use to produce marketable services. The individual dimension of how consumers actually appropriate and use what they have bought is often left out in this perspective. The term „**user**" then enables a focus on the process after the purchase and is often employed as a term to define the actor actually engaging with a good or service, and to describe her/his interaction/s with mainly consumer durables. An **owner** implies the idea of possession but not necessarily the use of a particular good or service (conversely users need not own a good or service to use it).

Technology refers to a composite of artefacts, systems and services. It can be discussed in terms of objects, knowledge, activity, and volition.[17] Stressing the control aspect of technology, recent theorizing has presented it among the coordination media next to money and power.[18] In the last decades especially, the sensual and experiential aspects of technology have become increasingly significant, and besides, a number of feminist scholars have re-emphasised that the term technology should also comprise knowledge about, skills linked to and the actual everyday use of technology.[19]

For the field of 20th century technological consumption, other concepts should be clarified, since besides consumers and users, other actors or agents[20] have gained a prominent place in the literature on consumption. **Mediators** of technology, such as advertisers or retailers, are the actors who in the first place enable the consumption of the industrial goods introduced on the market by **producers**. **Retailers** -as the actors who provide a direct interface with

[16] For a concise presentation and further insights on ANT, cf. What is actor-network theory? http://carbon.cudenver.edu/~mryder/itc_data/ant_dff.html.

[17] Cf. Mitcham, Carl, Thinking through technology. The Path between Engineering and Philosophy. Chicago 1994, pp. 161-266 (chap. 7 – 10; in these chapters, Mitcham describes types of technology as object, knowledge, activity and volition).

[18] Cf. Feenberg, Andrew, Questioning Technology. London 1999, p. 171.

[19] Cf. our discussion of the gender dimension in agency, Chap. 5.

[20] For a distinction between actors and agents cf. the beginning of Chap. 5.

potential consumers and facilitate the exchange of goods, services and information against purchasing power- and **servicing** personnel –as maintainers/ repairers of consumer durables[21]- are often overseen in the consumption-production-product triad.

As we have already mentioned, various forms of consumption should be distinguished, especially the salient divide between **individual and collective consumption**. Furthermore, one should also determine what and how much is being consumed. For instance, in the immediate aftermath of WWII, **food** and **housing** represented the largest part of household expenditures, whereas nowadays, depending on a country's GNP and individual circumstances (e.g. specific housing market, etc.), these expenditures are no longer necessarily the highest. **Commodities** should be subdivided into durables and non durables (e.g. a car as opposed to body care products). **Services** should be mentioned as the sector which holds the most promise for growth and increased automation and self-service. Looking back to the last century, the share of services, as opposed to that of agriculture and industrial production, has increased very significantly in western economies.[22] The **self-service economy** can perhaps be described as a gradual shifting of servicing responsibility from the producer to the consumer (examples include areas as different as the provision of food, internet banking, the assembling of furniture, etc.[23]). Increasingly, however, more than goods and services, the **marketing of experience and feelings** has recently reached a high that seems well out to last.[24]

Levels of consumption should be linked to disposable income. Nevertheless, it should be borne in mind that some consumers limit their consumption for political/ethical or ecological reasons, thus displaying a particularly thorough brand of discriminative consumption or non-consumption.[25] Short-term **boycotts** are mainly directed towards products manufactured by a specific firm, thus putting pressure on the policies of this particular firm through non-consumption or rather, through the shifting of consumption towards other producers' offers. Most of the literature we have consulted focuses on average income cross-sections of western societies, some also examines the more spectacular consumption of the rich. Unfortunately, the **consumption of the poor** rarely appears to be a target for closer study. Finally, historically, when focusing on the **continuities and discontinuities of consumption** in the 20th century, one can distinguish a major turning point in the post-WWII period, from the dearth of the late 1940s to the splurge of the 1950s, not to mention the growing ideological divide on consumption between the former eastern and western blocks, spurred on by the Cold War and the importance of consumption in the process of nation-building.[26]

---

[21] For stimulating inputs on repairing in the consumer society and for hints about DIY and tinkering cf. Reith, Reinhold, Reparieren: Ein Thema der Technikgeschichte? In: Reith, Reinhold and Schmidt, Dorothea (Eds.): Kleine Betriebe – angepaßte Technologie? Hoffnungen, Erfahrungen und Ernüchterungen aus sozial- und technikhistorischer Sicht. Münster 2002, pp. 139–161. In this article, Reith demonstrates that repairing, whether it is performed in service companies or in private households, is ubiquitously embedded in everyday life and is thus an important aspect of the history of technology.

[22] Cf. Wengenroth, Ulrich: Technischer Fortschritt, Deindustrialisierung und Konsum. Eine Herausforderung für die Technikgeschichte. In: Technikgeschichte 64 (1997), pp. 1-18.

[23] Cf. also our discussion of Solveig Wikström, Chap. 5.

[24] Cf. e.g. Schulze, Gerhard, Die Erlebnisgesellschaft, Frankfurt & New York: Campus Verlag, 1992.
See for a recent example the fascinating experience concocted by The Guardian on the marketing of „Joy" as a fake brand: Burkeman, Oliver, „A hairy naked man in a rubber ring. Interested?" in the supplement *Branded: a special investigation*, The Guardian, London: 09.07.01

[25] A witness to this trend is the relative success of „buy-nothing-days" (the effect of which is unfortunately often compensated by prior or subsequent over-shopping). It should however be mentioned that these forms of discriminative non-consumption are mainly an option for the rich and ultimately often have a negligible political effect in the long term.

[26] Cf. e.g. Andersen, Arne, *Der Traum vom guten Leben: Alltags- und Konsumgeschichte vom Wirschaftswunder bis heute*, Frankfurt a/Main & New York, 1997. With this very comprehensive portrait of post-war Germany

3. Focusing on the act of consuming

3.1. Commodities, practices, and meanings

Anthropology and ethnology, i.e. fields with curricula traditionally focused on material things and everyday practices, were among the first to analyse commodities more thoroughly, with a main emphasis on non-western societies. In the beginning of the 80s, British and American anthropology in particular began to consider the functions and meanings of consumption. Two lasting and fruitful concepts that were developed in this context shall be introduced first, before moving on to recent literature and to its reception in and influence on historical works.

One of the most influential book in this realm is "The World of Goods" (1979) by the economist ***Baron Isherwood*** and the anthropologist ***Mary Douglas***. Herein, the authors regard goods as constituting an information system and thus define consumption as a **nonverbal medium**. People, aiming to make sense of the world, are interpreted as using goods as a medium for eliciting consensus: consumption is then basically seen as a system to exchange and/or control information.[27] Goods become meaningful only in relation to the other goods of the information system of a given community. Douglas and Isherwood thus refer to, on the one hand, the relevance of material structures for the development of social structures at a time when the general academic opinion was predominantly critical of consumption. On the other hand, using this perspective, they wanted to go beyond the division between physiologically determined needs and other needs (wants), which until then was mainly taken for granted. Besides, their approach argues against the sovereignty of the rational individual that calculates her/his best interest, detached from her/his reference system.[28]

Douglas and Isherwood's basic assumption, that is to interprete goods as an information system, along with similar approaches by the French thinkers Roland Barthes and Jean Baudrillard, has meanwhile become a standard assumption in consumption studies. However, other frameworks in this by now classic book, which Isherwood and Douglas developed as sophisticated explanations for consumption behaviour, have hardly been taken up.[29] Hence, in this literature review we would like to at least present one of the frameworks suggested which provides a technology-based approach to consumption. The authors assume that each consumer wishes to enlarge her/his "personal availability" (i.e. being free from duties and able to choose one's social activities) and besides, that each good, as a consequence of its

---

(including chapters on the "pigging-out" wave, tourism, cars, electrification, etc.) , Andersen has unearthed the roots of some of the most salient consumption patterns of the 1950s, the repercussions of which are still being felt to this day. Cf. also, Carter, Erica, *How German is She?: Postwar West German Reconstruction and the Consuming Woman*, Ann Arbor 1997. In this book, Carter pointedly describes the link between consumption and nation-building. Additionally, cf. Pfister, Christian, Das 1950er Syndrom. Der Weg in die Konsumgesellschaft. Bern, Stuttgart, Wien 1995, which contains many interesting essays on e.g. the link between falling energy prices and man's relation to nature as symbolizing an epochal turn.

[27] Cf. Douglas, Mary; Isherwood, Baron: The World of Goods. Towards an Anthropology of Consumption. London 1996 (first published 1979).

[28] This can be seen in their "grid-/group-diagram" that analyses the potential scope of action of individuals depending on their group belonging and their individual range of action (p. 23 ff).

[29] Recently, the marketing expert Helene Karmasin built on Isherwood and Douglas's cultural theory in her writings on the semiotic dimension of (western) food and, in general, of consumption with the aim of providing a theoretically saturated marketing theory as well as practical marketing guidelines, especially in the field of advertising. Karmasin extensively uses their "grid-/group-diagram" (cf. footnote above). Cf.: Karmasin, Helene: Die geheime Botschaft unserer Speisen: Was Essen über uns aussagt. München 1999, and Karmasin, Helene: Produkte als Botschaften. Was macht Produkte einzigartig und unverwechselbar? Die Dynamik der Bedürfnisse und die Wünsche der Konsumenten. Die Umsetzung in Produkt- und Werbekonzeptionen. Wien 1993.

physical property, has a specific "consumption periodicity" (e.g. fresh apples have to be eaten sooner than frozen food in combination with the freezer). Thus, each technological provision level corresponds to a particular consumption periodicity: for example, a fridge results in a lower shopping frequency. Two basic consumption patterns result from this: "large-scale consumption patterns with low-frequency activities" and "small-scale consumption patterns with high-frequency activities". Consumers strive for the first one as it goes along with high personal availability and high social rank. In contrast, high-frequency activities like child caring or household duties go along with a low social rank and, in many societies, are therefore carried out by women. As we will discover, this reasoning -although hardly related to Baron and Isherwood anymore- is also important when dealing with the question of technological consumption and its normalization (cf. section 3.4).

Another seminal concept was introduced by the cultural anthropologists Arjun Appadurai and Igor Kopytoff. Mirroring the many biographies of a person (e.g. psychological, professional, familial biographies), they argued for a "**(cultural) biography of things**". Their metaphor suggests that things also experience a life history involving different aspects such as a physical or a technical biography.[30] Thus, with this metaphor, things themselves and their usage became a main focus for researchers' attention. Within the life of things, Kopytoff emphasised the shifts and differences in whether and when a thing is seen and treated as a commodity (defined as a thing intended for exchange) or looses that status. He used slavery as an example of how a human being can become a commodity when sold and later be "rehumanized". Although the term "biography of things" has been defined in a different context, it has nevertheless been fruitfully developed in many western consumption studies, as mentioned later in our review.

During the 1980s and even more so during the 1990s, ethnologists and anthropologists from the western academic scene gradually turned to their own culture(s) and thus began to thematise western mass consumption and technology. In Great Britain, around ***Daniel Miller*** and the Department of Anthropology at the University of London, the new discipline of **material culture** gradually evolved into an important current of anthropology. Material culture studies have been concentrating on mass produced objects and their meanings for modern (mainly western) consumer societies. The basic approach of this discipline is a focus on the specific materiality of things, their sensual qualities, and more generally, on the multi-layered quality of objects and the resulting connections between these objects and cultural practices and values, whilst attempting to avoid a "fetishisation" of artefacts. A common research tool is the ethnographic enquiry into the particular articulations between persons and objects. However, apart from ethnographic enquiries, material culture studies use a wide array of methods and include approaches from history, archaeology, semiotics or literature. One of the recent books edited by Daniel Miller, „Material cultures. Why some things matter" (1998), is a good example of this eclecticism: it gathers themes spanning from the fabrics of Irish banners as embodying protestant history, to the relation between interior decoration and gardening in France in contrast with Great Britain, through the consumption of Coca-Cola as a global product in the local context of Trinidad.[31]

This diversity of subjects, although it proves very stimulating, makes it more difficult to give an overview of the themes of material culture and a summary of its main conclusions. A

[30] Cf. Kopytoff, Igor: "The cultural biography of things: commoditization as process", in: Appadurai, Arjun (ed.): The social life of things. Commodities in cultural perspective. Cambridge, London, NY, New Rochelle, Melbourne, Sydney 1986, pp. 64-91.

[31] Cf. Miller, Daniel (ed.): Material cultures. Why some things matter. Chicago 1998. The authors were all PhD students at the Department of Anthropology.

central problem with this approach is that these studies are rarely explicitly anchored in theory. For example, the authors of the volume we just mentioned intentionally abstain from "overly abstract theoretical models" (p. 19). However, since some studies in this field explicitly focus on the materiality of objects as a source for/of meanings, these will be discussed in more depth in section 3.2.

In recent years, German ethnology or "Volkskunde" has also tried to include mass consumption and technology themes in its scope. Before this turning point, the discipline had mainly studied remnants of rurality and the old folk customs of German-speaking countries.[32] The new focus is broached under the heading of „**technology in everyday life**" („Technik im Alltag") a term that has also been used by German sociologists since around 1980. Like British material culture, themes and methods here are also diverse and an explicit theoretical anchorage is often missing. One of the recent essay collections, "Technik - Kultur" (1998), displays the variety of the field:[33] essayistic reflections are to be found alongside detailed studies on technological consumption in everyday life, with the articles divided under themes such as "spaces" (e.g. the elevator), "movements" (e.g. an article on manners and observation behaviours in the tram), or "communication".

The ethnologist Stefan Beck in his book "Umgang mit Technik" (interaction with technology) (1997)[34] has attempted to confront ethnology's shying away from theory, especially within the German „Volkskunde" discipline. Herein, Beck aims to outline a theoretical framework for future studies on everyday technology and, more generally, for the future cultural analysis of a society. In parallel, he provides a convincing overview of the relevant international literature in the field, both from ethnography and from neighbouring disciplines such as philosophy, history- or sociology of technology. Beck's framework is based on the study of practices to analyse interactions with technology. He distinguishes between two dimensions: the "co-text" (Ko-Text) and the "con-text" (Kon-Text) following up on the communication theory of Hans-Peter Krüger who differentiates between the syntactical and semantical co-text and the pragmatic con-text (cf. p. 160). Thus, the "co-text" of a technology can be linked to the dimension of meaning, whereas the "con-text" represents the concrete praxis dimension, or the tangible dimension of practices. Furthermore, the conditions and restrictions of usage embodied in the artefacts and their inclusion in technological structures ("Nutzungsbedingungen"), are differentiated from instructions for use that are mediated by discourse ("Nutzungsanweisungen"). Conditions and restrictions of usage belong to the ("hard") con-text while instructions for use modelled by cultural orientations, habits, discourses or other meaning-making resources belong to the ("soft") co-text. Future research, as Beck contends, should consider the following aspects: a so-called "complex situational analysis of usage" has to be conducted that includes both co- and con-text, hence the meanings, materiality and usage of an artefact. This analysis must also take the individual, sometimes creative and even playful practice of the user and her/his active meaning creation

[32] Emanating from the discipline itself, an early and influential demand to include technology in the research perspective was: Bausinger, Hermann: Volkskultur in der technischen Welt. Stuttgart 1961.

[33] Cf.: Hengartner, Thomas; Rolshoven, Johanna (eds.): Technik - Kultur. Formen der Veralltäglichung von Technik - Technisches als Alltag. Zürich 1998. For other recent studies on the field of consumption and technology provided by this discipline cf. e.g. an older study on changing washing practices in the context of new washing-machines, shifting hygienic standards and clothing cultures: Silberzahn-Jandt, Gudrun: Wasch-Maschine: Zum Wandel von Frauenarbeit im Haushalt. Marburg 1991; the author focused on the main actors engaged in the process, i.e. housewives, and conducted several interviews. For a study on current shopping behaviour, cf. Keim, Gerhard: Magic Moments. Ethnographische Gänge in die Konsumwelt. Frankfurt, New York 1999; Keim used interviews and participatory observation in a popular department store in Stuttgart. He interprets the store as a museum, a theatre, as well as an image and theme park.

[34] Cf. Beck, Stefan: Umgang mit Technik. Kulturelle Praxen und kulturwissenschaftliche Forschungskonzepte. Berlin 1997.

into account. Methodologically, Beck recommends using participatory observation and also (critically reflected!) interviews. Finally, both the creative potential of a practice and the situational dependence should be considered. In the end, this highly ambitious concept might prove too complex to really be applied in empirical studies. Nevertheless, the book should contribute towards developing a more critical look at methodological and theoretical questions within the field of (at least German) ethnology.

Despite the shortcomings of the above-mentioned past research, ethnography, anthropology and material culture offer valuable tools and perspectives for the analysis of current consumption practices since they take the complexity of consumption and of the user-object relation into account. By including a **historical perspective**, these disciplines have also begun to enlarge their fields of research to shifts in consumption patterns over time - a point missing in Beck's instructions although he points towards the possibility of change. The resulting studies, some of which will be presented now, mostly focus on individual biographies and mainly use methods drawn from oral history.

Echoing the "biography of things" terminology, Orvar Löfgren suggested the idea of the "**biography of users**". In the Swedish research project he conducted, people were asked to write their own „consumption life history", i.e. their „life as a car owner, radio listener and television viewer."[35] By focusing on users' biographies, it became apparent that, over the years, consumers learn "how to consume". Thus, the usage of an artefact depends on how new or familiar it is. Löfgren suggests differentiating the following steps in the biography of users and things, respectively: the introduction phase (1) is characterized by "happy experimentation" and utopian thoughts; during diffusion, the product evolves from sacralization to routinization / trivialization (2), followed by "cultural aging" (3) a phase that often intervenes more rapidly than the actual physical wear and tear. Some objects might, in a fourth phase, be recycled or redefined.[36]

Two current German studies also deal with technology and its role in users' biographies and memories. Jutta Buchner-Fuhs aims to reconstruct the cultural meanings which users in the countryside ascribed to technological innovations of the 50s and 60s; gender is her main analytical grid and the source material stems from oral history methods in connection with old family photographs.[37] In the project "technology as biographic experience" ("Technik als biographische Erfahrung"), co-ordinated at the University of Hamburg,[38] 50 women and 50 men were questioned, during open but thematically structured interviews, about their dealing and experiences with technology both in their private and professional lives.

To sum up, ethnographic and anthropological research increasingly uses historical methods, be it the still controversial field of oral history, or the traditional hermeneutic interpretation of

[35] Cf. the provisional outline of the project: Löfgren, Orvar: Consuming Interests. In: Culture & History 7 (1990), pp. 7-36.

[36] This life-cycle metaphor is used in many disciplines, cf. section 3.4. Another anthropological interpretation stems from Pfaffenberger with his concept of "technological drama" which pitches system stabilisation against wilful use. The phases he distinguishes are "technological regularization", "technological adjustment" (meaning the appropriation, and including the counterappropriation by the underprivileged) and finally "reconstitution". Cf.: Pfaffenberger, Bryan: Technological Dramas. In: Science, Technology and Human Values 17 (1992), pp 282-312.

[37] The project is entitled: „Technik und Geschlecht in ländlichen Lebensverhältnissen. Zur kulturellen Bedeutung von Alltagstechnik in Erinnerungserzählungen" (technology and gender in rural environments: the cultural significance of everyday technologies in narratives based on memory). Cf.: http://www.uni-marburg.de/euroethno/techsex.html

[38] Cf. project description on the internet: http://www.rrz.uni-hamburg.de/technik-kultur/

written and/or pictorial source material.[39] Some researchers have already provided substantial historical inputs for the context of technological consumption, as can be found, for example, in the works of the anthropologist Michael B. Schiffer, e.g. on the portable radio in America.[40]

In general, these approaches demonstrate the importance of considering both artefacts and users, and show the way to consumption historians who are gradually beginning to incorporate similar studies. However, the reception of these studies might be hampered by methodological and theoretical considerations. Ethnological and material culture studies tend to use eclectic methods, many of them absent from the realm of the traditional historical curriculum. Besides, some of the methods of oral history (e.g. open interviews and the use of self-constructed accounts such as memories) are controversially discussed within the historical discipline since they need to be used discerningly. However, as already mentioned above, a greater hindrance is the theoretical abstinence often encountered. The studies are only rarely consciously embedded in the main theoretical approaches of consumption and/or technology literature, an anchorage which would enable researchers to make links more easily between different fields.

To conclude this section, we would like to quote **historical studies** which take up questions about artefacts, practices and meanings. The historical discipline has only recently begun to analyse mass consumption with regard to individual consumption practices, mainly because for a long time perspectives on mass consumption were influenced by a strong culturally critical stance– both in leftist circles, pursuing the train of thought evolved in the Frankfurt School, and in rightist environments, where the loss of traditions was feared. Typical of the German scene was the interpretation of mass consumption as a form of estrangement or, according to Habermas, as a colonisation of the world of experience, thus overlooking the fact that alienation and emancipation can be regarded as complementary phenomena. The growing research on goods and everyday practices in other academic fields and general developments subsumed under the heading of "linguistic turn", combined with the growing influence of sub-disciplines such as social history and history of everyday life, finally lead to the re-consideration of mass consumption as a historically significant **cultural form**.

In Germany, the design historian Gerd Selle, whose work has become a standard compendium, was among the first to focus on the objects of mass consumption.[41] In the beginning of the 90s, Wolfgang Ruppert, who has a background in workers' and cultural history, tried to establish the term „**industrial mass culture**" ("industrielle Massenkultur") in his research in order to emphasise the relevance of industrially produced mass phenomena. In the books edited by Ruppert, various historians wrote about a number of themes linked to mass consumption, e.g. the symbolic meanings of flowers, technologies like the plane or the TV, and more mundane artefacts such as the beer glass.[42] We found the book "Um 1968" (Around 1968) particularly interesting because it describes several everyday technologies of the late 1960s in their cultural context, e.g. TV design and domestication in the GDR or

[39] For a remarkable integration of historical pictorial sources by an ethnologist cf.: Garnert, Jan: Über die Kulturgeschichte der Beleuchtung und des Dunkels. In: Historische Anthropologie 5, 1997, pp. 62-82. Garnert, in his works, aims to connect perspectives from ethnology, anthropology and history of technology.

[40] Cf. Schiffer, Michael Brian: The Portable Radio in American Life. Tucson, London 1991.

[41] Cf. Selle, Gert: Geschichte des Design in Deutschland. Frankfurt a. M., New York 1994 (4th, revised edition) (first published in 1978).

[42] Cf. the following books edited by Ruppert, Wolfgang (Ed.): Fahrrad, Auto, Fernsehschrank. Zur Kulturgeschichte der Alltagsdinge. Frankfurt a.M. 1993; Chiffren des Alltags. Erkundungen zur Geschichte der industriellen Massenkultur. Marburg 1993. "Chiffren des Alltags" is the outcome of a conference on the "History of industrial mass culture" in 1990.

stereos in West-Germany. In the latter, the design, the embedding in a domestic environment and the experience of high fidelity and stereo are described in connection with the record industry, advertising and the new rock and pop sounds.[43]

Another strand within the (German) historical discipline is represented by the studies conducted in the context of the **modernisation** of German society after WWII and the question of its characteristics during the formative phase of the 1950s. In general, and in contrast with Ruppert's approach, these studies are less strictly focused on the objects of consumption and individual user practices. Rather, the leading question is the function of technology both for modernisation and in society at large.[44] Closely linked to the stance we have adopted in our review, we would like to mention Michael Wildt's book on post-war West-German consumption, in which he analyses the consumption of food during the decades after WWII (between 1945 and 1963).[45] Wildt first examines the phenomenon of consumption itself, as a social praxis, but he also distinguishes the places where food is actually consumed, such as the kitchen and shopping outlets. Finally, he focuses on discourses on food (e.g. healthy nutrition and ideologies about slimness). He uses inspiringly innovative sources, from housekeeping books compiled by working-class families (as requested by the Department of Statistics), to public polls on preferences and future consumption wishes, as well as recipes in the customer magazine published by the big German retailer "Edeka". Wildt emphasises the semiotic dimension of consumption, for instance, the emphasis on emotional needs by giving the example of the importance of packaging and the choice of wording, which, for instance, can confer a much higher status to a brand of margarine than that of a vulgar oily spread. The sources he uses to disclose semiotic dimensions are nevertheless limited to written discourse, as in advertisements or recipes. His conclusion about the (total) consumption of working-class families is that former assumptions which led to the description of the period in terms of „consumption waves" are inappropriate. Instead, Wildt distinguishes two distinct phases: a fascination for food as a means of pleasurable gratification is the hallmark of the 1950s, whereas the 1960s spell the beginning of an era which one can describe as the "end of humbleness or thrift"- where for the first time spending on going to the pictures, purchasing electric appliances or cosmetics, indulging in holidays and investing in transportation acquire added significance.

Interesting insights could be gained by a comparison of post-war consumption between East and West Germany. However, up to now few studies on East German consumption have been able to provide a good basis for this comparison.[46] It nevertheless appears - from existing research- that there have been many different paths leading into consumer culture.

What is missing in both ethnography and history (and sometimes also material culture) as we have described them until now, is a focus on the **analysis of extant artefacts**. Therefore, the

[43] Cf. Ruppert, Wolfgang (ed.): Um 1968. Die Repräsentation der Dinge. Marburg 1998. The article mentioned is: Gauß, Stefan: Das Erlebnis des Hörens. Die Stereoanlage als kulturelle Erfahrung. pp. 65-92.

[44] Cf. e.g.: Schildt, Axel; Sywottek, Arnold (Eds): Modernisierung im Wiederaufbau. Die westdeutsche Gesellschaft der 50er Jahre. Bonn 1993; Schildt, Axel: Moderne Zeiten. Freizeit, Massenmedien und „Zeitgeist" in der Bundesrepublik der 50er Jahre. Hamburg 1995.

[45] Cf. Wildt, Michael: Am Beginn der „Konsumgesellschaft". Mangelerfahrung, Lebenshaltung, Wohlstandshoffnung in Westdeutschland in den fünfziger Jahren. Hamburg 1994; Wildt, Michael: Changes in Consumption as Social Practice in West Germany during the 1950s. In: Strasser, Susan; McGovern, Charles; Judt, Matthias (Eds.): Getting and Spending. European and American consumer societies in the 20th century. Washington 1998, pp. 301-316.

[46] Until now Ina Merkel is one of the key researchers in that field. For an overview of her ideas in English cf. the following article: Consumer Culture in the GDR, or How the Struggle for Antimodernity Was Lost on the Battleground of Consumer Culture. In: Strasser/McGovern/Judt, op. cit. (1998), pp. 281-299. Cf. our footnote 3 for more literature.

next section introduces approaches which use object analysis as a source to (re)discover meanings and practices. Connected to this attempt is the question whether the object itself incorporates characteristics that lead to universally understandable meanings or whether meanings can only be socially negotiated and ascribed.

3.2. Materiality as a source of and for meaning?

That things not only matter but also enclose crucial information about their "biography" is demonstrated by the established disciplines of **archaeology and historical anthropology** which draw conclusions on human behaviour and, more generally, on social history and the cultural conditions of any place or time on the basis of material remainders. As we have seen, **material culture** also emphasises the materiality and resulting sensual characteristics of objects. Additionally, the discipline of **museology** attempts to reflect the potentially informative or expressive value of exhibited objects. Meanwhile, it views itself not so much as a keeper of old and rare objects but as a mediator of stories from the past using the medium of extant objects. The field of „**socio-semiotics**" has been developed since the 1980s, in order to tackle the **semiotics of artefacts**. This new research field is quite eclectic as far as applied methods are concerned. Even if these methods are predominantly influenced by linguistics, many of the leading researchers in this discipline share a background in anthropology or material culture.[47] All in all, this field of research is not yet fully structured and conceptualised, which is why we would like to dwell a bit more closely on two studies.

To read "History from Things" (1993) was the uniting concern of a group of archeologists and museologists meeting at the Smithsonian in 1989.[48] Their attempt was to develop a coherent methodology to deal with **artefacts as historical sources**, be they modern or pre-modern. Here, we want to take a closer look at the article by Jacques Maquet, „Objects as instruments, objects as signs" (pp. 30-40). Although this is a short, hardly acknowledged piece, it is worth consideration, since Maquet develops relatively strict guidelines for the undertaking of an object analysis. He assumes that meanings can be differentiated between those grounded in common human experience, i.e. the instrumentality of the object, and those which are culture-specific, and thus in need of decoding.[49] Based on this, Maquet outlines five categories of meanings, reaching from non- through less culture-specific interpretations to those entirely dependent on a particular culture. Thus, he differentiates: 1. the "instrumental character" i.e. the functional use that can be understood by relying on common human experience, 2. symbols that participate in the nature of the signified („symbols by participation"), 3. images that stand for other things because of visual similarity („images by similarity", e.g. the Greek columns of steam engines), 4. indicators that stand for culture-specific associations („indicators by association", e.g. Greek architecture in the 19th c. US represented republicanism) and 5. referents in which the relationship between referent and signified is set by a social convention („referents by convention").

---

[47] Cf. Riggins, Stephen Harold (Ed.): The Socialness of Things. Essays on the Socio-Semiotics of Objects. Berlin, New York 1994. In his introduction, Riggins names four sources for meanings which can be read into/from artefacts: their physical characteristics, the information conveyed by their surroundings, the observer's life-long experience with similar types of objects, and texts about the artefacts.

[48] Cf. Lubar, Steven; Kingery, David W. (Eds): History from things. Essays on Material Culture. Washington and London 1993. Besides methodological reflections, both modern consumption objects and pre-modern artefacts (e.g. Chinese bronze vessels or the 18th c. English garden) are presented.

[49] Maquet does not conceptualise meanings as inherent to objects: „Meanings are not inherent to the object (as instrumentality is) or ascribed by the designer (as the meaning of a message is ascribed by the sender): They are given by the group of people to whom the object is relevant." (p. 35). However historians can (partially) gain access to these meanings by collecting information on the culture of the time.

To grasp images and symbols, the researcher can - in Maquet's view - more or less rely on her/his apprehensive power. But to understand the full range of meanings though, s/he must resort to additional historical sources so as to become a cultural insider and to learn about the conventional codes of the relevant culture. At first sight, this pragmatically oriented scheme seems to provide an appropriate framework to decode meanings from an object in a step-by-step manner. However, it touches upon basic controversies around human (consumption) experiences: for example, does a common human experience in relation to objects really exist as Maquet postulates? James J. Gibson, in his theorising towards an "ecological psychology" during the 60s and 70s, argued for the "affordances" of an object, referring to the potential of an object that "affords" or permits a certain action.[50] This view is close to the semiotic line of thought which argues about what potentials are necessary for e.g. a chair to be regarded as a chair. Authors who are unfamiliar with semiotics, material culture or anthropology often neglect this question, as they see every act of consumption and, in general, every human experience, as culturally loaded. Postmodern writers on the other hand even go so far as to speak about meaning as totally detached from the artefact itself, as in e.g. Baudrillard's concept of hyperreality, which leaves commodities with no referent whatsoever. Besides, what kind of and how far a "cultural insider" the researcher can become depends on the existing sources that he can draw upon.

Also, within material culture, although it is hardly stated as such, there exists the underlying assumption that objects enclose information about potential user-object relations and can thus be used as sources. Miller, in his introduction to "Material cultures. Why some things matter,"[51] claims that "through dwelling upon the more mundane sensual and material qualities of the object, we are able to unpick the more subtle connections with cultural lives and values that are objectified through these forms, in part, because of the particular qualities they possess" (p. 9). Whereas many studies, as they progress, loose sight of the object and its materiality, Miller's claim is remarkably upheld by an article in his book on usage of paper in the office.[52] The author, Pellegram, summarizes the results of the field study he conducted in a London office between 1990 and 1994. According to him, paper conveys messages and "the type of message that it can or cannot convey is limited by its physical attributes" (p.111). Pellegram makes a distinction between **overt and latent messages**, the latter ones being determined by physical and sensory qualities which can be immediately perceived by the beholder, without her/his being able to exactly explain this phenomenon. For instance, "post-it" notes come in a handy shape which makes them practical for informal messages. Their physical shape, in a sense, signals or means "informality" in a way which DIN A4 paper never could. The office's social hierarchy (managers, technical staff, administration) is then expressed by both paper type and paper use behaviour. These approaches within material culture thus argue for a common human experience of certain material qualities and related physical properties of objects, in a similar way to that expounded by Maquet.

In sum, we may conclude that objects, when used as sources, require a critical interpretation and a supplementation/confirmation by further sources, just as any written source does. Historians have had to acquire the necessary tools to deal with written sources and, increasingly, tools for pictorial sources are being developed. But when it comes to object

[50] Cf. Beck, op. cit. pp. 242-44.
[51] Op. cit. cf. footnote 24.
[52] Instead of focussing on the sensual aspects of the objects, many articles describe the social or symbolical factors of consumption, and in general, identity construction is seen as the main impetus driving consumption. In that sense, these studies cannot really be differentiated from those produced in the fields of history or sociology and the specific analytical power of Material Culture is thus lost in the process.

analyses, historians' resources unfortunately seem to be rather limited as yet. Further developments in socio-semiotics and material culture might however contribute to the shaping of useful tools to explore the meanings and information encoded in objects in a more thorough manner.[53] The semiotic perspective should be complemented by an anthropological approach, particularly because the latter incorporates the dimension of human experience and perception, thus more strongly emphasising the relationship between human being and object. Additionally, approaches such as those developed by the likes of Schiffer in a form of „anthropology of technology" or insights on the various encodings within technology (cf. Beck (Chap. 3.1.) as well as Akrich's "scripts" (Chap. 4.1.)) could prove extremely stimulating.[54]

At any rate, some insights are common to all the contributions we have just been discussing: objects tell us something about the technology that produced and shaped them, they also provide us with information about their function and display user traces that point to their user(s)/use, finally, they at least hint to symbolic aspects that have to be correlated with other sources.

3.3. Appropriation and domestication

As in the praxis-oriented theoretical approaches in ethnology, anthropology and material culture, which we mentioned above, the concepts of „appropriation" and „domestication" concentrate on the dimension of use and on users. Users in this context are not only described as active but as actual producers of their own values. The studies we would like to mention mainly stem from **media, technology** or **gender studies** and often focus on current technologies. They also use research tools similar to those used in ethnographic inquiry. However, their perspective is usually long-term so that, after the introduction of a new technology into a particular local setting, the evolution in practices and meanings can be described over a greater time span. The technologies researched are mainly those linked to the home environment, i.e. household and domestic media technologies. Since the user is seen as having choices in the selection and adoption of a technology and user agency is repeatedly emphasised, this section provides many links with Chap. 5. However, the question of users' power and influence on the production sphere is not raised. The conceptualisation of the user can be seen in parallel with developments within media studies. In certain communication theories, for instance, the idea of the passive recipient (linked to the corresponding stimulus-response-model) has been replaced by that of the actively selective media user. Since the 1970s, the "uses and gratifications" approach has been developed. In this approach, media content consumption is researched from the perspective of the reader/ viewer, with the underlying assumption that s/he chooses what provides gratification.

In appropriation/ domestication studies, the individual user or small social groups like the family or clubs are the main units of analysis. Nevertheless, institutions or nations etc. could

[53] For an example of an approach that could contribute to the semiotics of technology, cf. Retallack, Bruce G.: Razors, Shaving and Gender Constructions: An Inquiry into the Material Culture of Shaving. In: Material History Review 49 (Spring 1999) pp. 4-19. Incidentally, some of our own work also focuses on the razor (since this technical artifact proves a good starting point because of its obviously gender-connotated semiotics): cf. http://www.lrz-muenchen.de/~designing-the-user/sf-papers.html

[54] Cf. Schiffer, Michael Brian (Ed.): Anthropological Perspectives on Technology. Albuqerque 2001. The book was compiled in the aftermath of a conference in 1998 which brought together both archaeologists and anthropologists aiming to forge a distinctive anthropology of technology.

also be seen as agents of appropriation/ domestication. In general, many studies in this field use either the term "appropriation" or "domestication" without clearly defining these terms or demarcating themselves from the one or the other. Sometimes, both terms are used more or less interchangeably. Therefore, we first want to outline the scopes of meaning for both these concepts.

„**Appropriation**" describes the embedding and disembedding of practices related to technologies, through use and proximity. It implies that the user "appropriates" a technology and its meanings according to her/his needs and wishes. Consequently, a technology becomes "encultured". In this concept, technology is seen as subordinated to human beings since "to appropriate" bears the sense of "taking possession of".

The semantic field of to" **domesticate**", on the other hand, carries the sense of "to convert to domestic uses" and "to tame" (cf. Webster's Dictionary). Many researchers emphasise the dimension of taming when applying the concept of domestication and play with the analogy of domesticating animals and crops: technologies are taken from a "wild" outside sphere into one's "oikos" and are „tamed" by (re)making them into something close or even personal. Thus, in the concept of "domestication", technology seems to be endowed with more of a life of its own than in "appropriation". To some extent it even makes space for a mutual shaping of technology and users, e.g. when it is said that "(t)his process of taming is characterized by reciprocal change."[55] However, it is mainly consumption within the private sphere of the household that is researched which means that the domestic sphere –as the space of domestication- plays a major role, whether it is reflected or not.

In sum, appropriation is the broader, but also vaguer term that is chiefly used as a term to denote the individual takeover of an artefact. However, both appropriation and domestication take for granted the fact that technology is so to speak "given" from the outside – although it is society itself which produces its own technology. As a consequence, in these concepts, technology has to be "appropriated" and "domesticated" in a way that is similar to our relationship with a natural environment that has not (yet) been shaped by human intervention (i.e. Nature as a given).

The concept of „domestication" has been defined more precisely by the following essay collections: "Consuming Technologies. Media and information in domestic spaces" (1992), edited by Roger Silverstone and Eric Hirsch and "Making Technology Our Own? Domesticating Technology into Everyday Life" (1996) edited by Merete Lie and Knut H. Soerensen.[56] Here, the domestication process spans the following: the **acquisition** of a technology (including the first thoughts about how to use it, where to place it and discussions about the purchase before the actual acquisition), the **placing within a physical, symbolic, and mental space**, the **integration into the social practices of everyday life** and the **meaning ascription** both with regard to the local context (e.g. the household) and to the outside world. This process entails that the technology in question will be invested with the user's own significance that might differ from its public meaning.

[55] Cf. Lie, Merete and Soerensen, Knut H. (Eds): Making Technology Our Own? Domesticating Technology into Everyday Life. Oslo, Stockholm, Copenhagen, Oxford, Boston 1996, p. 8.

[56] Cf.: Silverstone, Roger; Hirsch, Eric (Eds): Consuming Technologies. Media and information in domestic spaces. London and New York 1992; and Lie & Soerensen op. cit. above. In "Consuming Technologies" which focuses on media technology, not all articles however fit into the concept of domestication, e.g. Miles, Cawson & Haddon describe how knowledge about future users influences the innovation process on the production side. The themes include Cockburn's microwave study or Campbell writing on the desire for the "new". Additionally, there are studies on the home computer, the scientific measurement of TV audiences, and the appropriation of the telephone by the Amish.

In „Consuming Technologies“, the private household is defined as the central locus of consumption, and thus, the household as such together with the individuals which constitute it are seen as the agents of domestication. In a theoretical article by Silverstone, Hirsch and Morley, the **household** is even presented as a "**moral economy**", i.e. it is seen as the relevant social, cultural and economic unit engaged in consumption. In their view then, the economic and symbolic transactions inside the household and between the household and the outside world are the main aspects to focus upon. We think that this view of the household as a "moral economy" leads to a limitation of the domestication concept: collective consumption processes which take place in the public sphere (public transport technologies, entertainment technologies, public services etc.) are thus left out from research. Moreover, household structures are changing and forms of social organisation, such as the nuclear family, are gradually loosing their primacy and meaning. This is especially the case in bigger cities where more than half of the population lives in single households in which domestic consumption is most likely to follow different patterns. The "moral units" for singles could perhaps be seen as groups of friends or colleagues outside the home. However, it might be argued that, as singles decide for themselves which contacts they want to pursue and validate, these new "units" do not have the same coercive and cohesive value as previous household arrangements did.

The volume "Consuming Technologies" emphasises the prominent position of domestic information and communication technologies (ICT) in consumption processes as these technologies are seen as functioning both as objects of consumption and as media facilitating consumption through their role as public circulators of information on and meanings of commodities. Besides, the reciprocal relation between user and technology becomes particularly apparent here. As the introduction to this volume states, ICTs are consumed whilst at the same time they consume the user's time and attention. Strictly speaking of course, every consumption activity and thus every good or service has an impact on the consumer's time and attention. However, this reciprocity is particularly obvious in the case of the consumption of non-material information and/or entertainment.
The fact that private meanings of technologies might differ from **public meanings** is impressively demonstrated in Sonia Livingstone's research on "The meaning of domestic technologies". Domestic technologies mainly bear meanings linked to concepts of privacy, security, family, intimacy, comfort and control that men and women define differently. Whereas women emphasise a technology's function as a facilitator of social contacts, men often emphasise its function as that of providing a substitute for social interaction. Thus, for women, technologies like the telephone and the car are valued as important community links. This might prove surprising as far as the car is concerned, since cars are often endowed with a very strong masculine connotation as opposed to other everyday technologies. But women label it as important because of its social function. For men however, the radio, the walkman or the TV are perceived as especially important because they provide individual leisure time. Besides, Livingstone points out that the public meanings of a technology differ from individually ascribed meanings since public discourse is often dominated by the male view (as in the case of the car where women's interpretation of the car as a "social connection tool" is missing in the public discourse). It should however be added that Livingstone's interpretation does not take into account that a lot of social interaction and communication among men is actually performed via the discourse on and the identity construction around technology.

Gender differences in the appropriation of a technology are more precisely analysed by Ann Gray in the case of the VCR.[57] Although this cultural study does not draw on the concepts of appropriation/ domestication, the practices and meaning ascription processes

[57] Cf. Gray, Ann: Video Playtime. The gendering of a leisure technology. London, New York 1992.

described here can be subsumed under this framework. Gray's main point entails showing how women's appropriation of the VCR can be strongly differentiated from men's appropriation. Gray therefore interviewed 30 women not only on their usage and perception of the VCR, but also on the larger context of domestic work and spare time. This larger context was included since many women (especially mothers and economically dependent women) perceive time spent at home neither as "real" leisure nor as "real" work. Instead, they have guilty feelings about "taking time off", a fact which, besides established gender differences in preferred media contents (genres and themes), influences their use of domestic leisure technologies. Thus women have developed a particular "mode of viewing" because they simultaneously have to pay attention to domestic obligations (multitasking). Alternately, some of them interpret the setting of the VCR timer as just another domestic "service" for the family which they tend to entrust to their male partner. Gray's study then shows that, rather than breaking up old patterns, new (entertainment) technologies are gradually incorporated into existing household and family structures, Furthermore, over time, the latter are also encoded in and ultimately buttressed by the new technology through its use and also through the choice of software.

Moreover, this study demonstrates that the household conceptualised as a "moral" and "economic" unit is misleading because there is no unified shared value system around technology within a household. Men and women, or more generally each household member, develop specific practices and meanings around a given technology. Often, this difference results from the more or less occult hierarchical structures inside the household. Here again, Gray's study provides us with a very significant illustration of this gendering process. As she felt that many gendered meanings within the domestic sphere were "embedded in the 'unconscious'" (p. 43), she employed a 'colour coding' strategy to highlight them: women were asked to imagine various equipment as coloured in either pink (a colour traditionally associated with the female sphere) or blue (a colour generally perceived as masculine). As a result, Gray found out that "the 'record', 'rewind' and 'play' modes of the VCR were generally viewed as lilac, but the timer switch was nearly always blue... The blueness of the timer is only surpassed by the deep indigo of the remote control which, in all the cases analysed, was held by the male partner or male child." (p. 248)

In „Making Technology Our Own?", the concept of domestication is applied in the largest possible sense: it not only includes technologies from the domestic sphere but more generally **technologies in everyday life**. Everyday life here is defined as any non-specialized routine activities in various settings, be it paid work, housework or leisure.[58] The presented micro-studies, conducted in Norway and based on sociological and/or ethnological methods, deal, inter alia, with ultrasound screening during pregnancy, PC usage or children's use of technology and its impact on parenting. The gender dimension is also kept present in the discussion. According to the instructive introduction of the book, its aim is "to make sense of the dynamics of technology and culture, and to provide images of active users to replace misleading ideas of technological determinism." (p.13) Without doubt, the detailed depiction of micro-relations provides colourful and contrasted images of active users, however, as in the above-mentioned essay collection, the theoretical concept of "domestication" sometimes gets lost along the way.[59] Nevertheless, a very positive aspect of this book is that domestication is

[58] One of the arguments given to not differentiate between private vs. public is that „...paid work is not completely controlled and of an instrumental nature, and neither housework nor leisure is completely free and expressive." (p. 14).

[59] This is especially apparent in the article on the symbolic gendering of the car since the author decided to analyse advertisements and conduct interviews with producing and advertising industries. It thus leaves out the use-dimension of the domestication process and only focuses on the producers' creation of meaning. The main conclusions of the study are that if a car is to be sold to men, fascination, speed and danger are thematised,

taken out of the implicit and often restrictive framework of the domestic sphere. This trend can also be seen in other researchers' work, linked to the increasing significance of mobile consumption. The usage of portable radios, stereos or cell phones crosses the border between private and public spheres and instead, creates its own, temporary spaces of usage. As far as mobile phones are concerned, Leslie Haddon pointed out that they have become increasingly conspicuous in public, a fact which heightens the importance of their symbolic dimension. This development has thus provided Haddon with the impetus to enlarge his domestication concept, which until then had been restricted to the domestic sphere.[60]

One could contrast the concepts of appropriation/domestication with the concept of „**implantation**" suggested by Martina Hessler in her historical study on household technology in Germany (1920-40). Her focus is more on the discourses surrounding the introduction of a technology than on actual consumption practices. Such discourses on new technologies are usually described under the headings of "cultural appropriation" or "intellectual appropriation", the latter one mainly taking elite discourses of leading intellectuals into consideration.[61] Hessler now suggests the term of "implantation", drawn from the fields of biology or medicine, to hint at the integration processes of a technology into the values, norms and structures of a given society. She thus looks at how a technology is adapted, and how, finally, it develops into a seemingly organic part of society and can thus hardly be removed anymore. Additionally, as with medical implantations, the implanted technology can be rejected because of resisting agents. A successful implantation for Hessler should be assessed on three levels, that is with regard to: 1. the symbolic meaning that is ascribed to a technology, 2. the societal usage and place that a society provides for it and 3. the different functions of the technology with respect to each agent (e.g. during the introduction of household technology, consumer leagues did not have the same motivations as the electrical industry).[62]

The following agents of implantation are described in depth: electrical companies, housewives, architects and the Nazi regime. Hessler then analyses the discourses of the electrical industry and advertising, as well as those of women's organisations, architects and official housing representatives. Her main conclusion is that electrical appliances were always connected to discourses on modernity, with "electricity", "modernity", and "progress" as the main buzzwords used to push for their introduction. Most enlightening is her contribution on the nazi period. During that period, the symbolic meaning and the societal position of household technology changed: consumption became an obligation for each "Volksgenosse" (fellow-member of the German nation) and, from the political point of view, it was used to stabilise the totalitarian regime. Moreover, modern appliances were connected with egalitarian aims such as bringing electricity to the "people" as a whole. In contrast with the general understanding of appropriation, the focus of cultural/ intellectual appropriation and implantation studies is not on individual consumer practices but on a wider and more complex web, that of the agency of socially significant groups and even the State itself.

---

whereas for potential female purchasers, practical utility, sensibleness, safety and speed control are emphasised. Technology is thus affected by gender, but at the same time it confirms, adjusts and sometimes also questions gender relations.

[60] Cf. Haddon, L.(2001) *Domestication and Mobile Telephony*, paper presented at the conference 'Machines that Become Us' Rutgers University, New Brunswick, New Jersey, US, 18th-19th April.

[61] Cf. Haard, Mikael; Jamison, Andrew (Eds): The Intellectual Appropriation of Technology. Discourses on Modernity, 1900-1939. Cambridge, M.A., London 1998.

[62] Cf. Hessler, Martina: "Mrs. Modern Woman". Zur Sozial- und Kulturgeschichte der Haushaltstechnisierung. Frankfurt and New York 2001, in her introduction.

3.4. Normalisation or how wants become needs

Processes of normalisation are systematically described by every consumption history that focuses on the diffusion of a "successful" product or technology. **Normalisation** in this context means that the product/ technology is taken for granted by the individual user and society at large. Thus, one could include here all the studies that describe the processes of the **appropriation/ domestication** of a technology, combined with the effects of a successful **implantation**, i.e. the process of how a "new" technology becomes "normal" and often part of a **large technological system** (cf. Thomas Hughes). Recently, to give an example of this type of research, Gail Cooper described how in the US, during the first half of the 20th century, air-conditioning became an ordinary everyday comfort. Cooper first reminds us that comfort was once defined as fresh air and then shows how this idea, through a long process of education, advertising, legal change, etc., became replaced by the idea of comfort as a technically controlled and constant temperature. Air-conditioning is thus a history of air, not of cooling, an aspect which, in the beginning, was not considered an essential feature of the technology.[63] In contrast with Cooper however, many studies do not question how this transformation from "new" to "normal" happens. In the following, we introduce a few studies which precisely focus on this question.

In particular, studies with a perspective on **sustainable development** examine the changing wishes, attitudes and behaviours behind the process of normalisation. These studies are ethically and/or politically motivated, and insert individual consumption standards in the context of their effects on a region, a country, or the earth as a whole, especially in regard to the environmental system. Additionally, consumption standards are mainly defined as normative and moral standards. The aim of these studies then is to contribute insights into the **motives and meanings of consumption** which might provide instructions and perspectives for the development of sustainable products. These researchers (mainly economists and sociologists) characterise the process of normalisation by the **transformation of "wants" into "needs"**, both of the individual and society at large. These studies therefore lead us into the complex debate over "fundamental" vs. "luxury" needs (cf. Chap. 2).

Some interesting studies originated around the ESF-project "Consumption, Everyday Life and Sustainability" initiated in 1995.[64] In this project, consumption was mainly interpreted as a **collective enterprise** held together by social expectations, cultural conventions and material constraints and the related empirical studies focused on changing consumption practices in relation to their environmental impact. Elizabeth Shove and Dale Southerton, for example, clarified the **normalization process** of the freezer in Britain by analysing freezer cookery books and manufacturers brochures from 1968 onwards and conducting interviews with contemporary retailers and kitchen installation firms.[65] They thus showed how, over three decades, the purpose and meanings of the freezer were being continuously negotiated and redefined. Around 1970, the freezer was introduced (with only 3% of British households owing one) as a tool for the countryside in order to manage seasonal gluts of food. In the 80s it became an efficient tool for household management (bulk buying, ready access to deep

[63] Cf.: Cooper, Gail: Air-conditioning America. Engineers and the Controlled Environment, 1900-1960. Baltimore, London 1998. Cooper argues for the social construction of technology and focuses on the engineers, consumers, and corporations as agents. She looks into air-conditioning in factories, schools, movie theatres and lastly, the mass production of window air conditioners for private homes.

[64] Cf. the link: http://www.comp.lancs.ac.uk/sociology/esf/index.htm; among the researchers are Elisabeth Shove, Dale Southerton, Mika Pantzar, Jaap Jelsma, Don Slater - to name but a few.

[65] Cf.: Shove, Elisabeth; Southerton, Dale: Defrosting the freezer: From novelty to convenience. A narrative of Normalization. In: Journal of Material Culture, 2000, pp. 301-319. In parallel, Mika Pantzar analysed the normalisation process of the freezer in Finland, cf. the texts on the ESF-homepage mentioned in our footnote 61.

frozen food) and in the 90s it finally became considered as a convenience to enable time shifting.

The example of the freezer also clearly demonstrates the importance of the systems approach: Shove and Southerton point to the web of co-determining practices and technologies because of **technological systems** and **commodity networks**, e.g. bulk buying enabled by cooling technologies also means that one needs a car for quick transportation. Within the history of technology, the concept of large technological systems (LTS) as introduced by Thomas Hughes, is used to describe this type of phenomenon. The terms "commodity network" or „ecology of goods" are mainly used in institutional economics. Mika Pantzar points out that, as in a biological or social ecology, goods are integrated with other products that take on the role of constraints, they co-exist in a form of mutual interdependency behind which human needs appear as almost secondary.[66] In general, there is a trend towards broader consumer-commodity networks, in which the use of one good is bound to that of another: e.g. the VCR needs the TV which is integrated in the broadcasting system, the programme of which is printed in TV magazines, etc. According to Thomas Hughes's concept of a "seamless web", in which he pointed to the inseparability of technical and social aspects which are knit together in the resulting fabric of a socio-technical system,[67] one could coin here the idea of a "**seamless web of consumption**".

In the field of normalisation research, the metaphor of the „**biography of users/ things**" (cf. Chap. 3.1.) is also applied and describes the normalisation process as linked to the changing motives, functions, and meanings of consumption. Besides, the economic model of a **product's life-cycle** is used.[68] In a nutshell, various stages of a product are differentiated -in respect to its production and consumption- in which motives of use, meaning, importance, and role are constantly re-contextualised. For example, the economist Mika Pantzar distinguishes three (ideal) stages -characterised by different choice motives, usages, and functions- of a product, which he labels using the catchwords **toy, instrument, and art**.[69] During the creative induction phase ("toy"), the function of a product is publicly perceived as a toy, a luxury or a „wonder of science". Its consumption is driven by sensation because of the novelty, pleasure and status of the product. It is mostly consumed collectively and it is in this shared experience that its definite function is negotiated and found. During the following standardization ("instrument") stage, the product is perceived as a tool, a necessity and a "serious" commodity. It is consumed on an individual and routine basis. Furthermore, "functional needs" and routines emerge which are satisfied by the consumption of this product. In the last phase ("art"), the product's function is reappraised, its consumption as such is often criticised (e.g. the mass consumption of cars), and consumers show a discriminative consumer behaviour (e.g. ecological or design considerations). Creative usages emerge where the object

[66] The term „ecology of goods" as used by researchers such as Boulding, Pantzar, Rip, and Saviotti, is combined with a systems theory that argues for the self-maintenance of the system by the continuous renewal of its components. In this theory, and similarly in the Actor-Network-Theory (ANT), artefacts are also endowed with agency. The focus of these researchers lies on the emerging feedback mechanisms between consumption and production, mechanisms to which the living systems metaphor of „ecology" also points. Cf. Pantzar, Mika: Domestication of Everyday Life Technology: Dynamic Views on the Social Histories of Artifacts. In: Design Issues 13 (1997), pp. 52-65, here p. 54 ff.

[67] Cf. Hughes, Thomas: From deterministic dynamos to seamless web systems. In: Engineering as a social enterprise. Washington 1991, pp. 7-25.

[68] In professional marketing, the "life-cycle"-model is also used with a distinction between the following phases: introduction, growth (expansion), maturity, saturation and decline ("Wachstums-", "Reife-", "Sättigungs-" und "Schrumpfungsphase").

[69] Cf. Pantzar (1997) op.cit., and Pantzar, Mika: Consumption as Work, Play, and Art: Representation of the Consumer in Future Scenarios. In: Design Issues 16 (2000), pp. 3-18.

functions as a luxury with the purpose of "de-routinizing" practices (e.g. the use of old timers). Motives for consumption in this case are stylisation, collection or self-expression.

Thus, Mika Pantzar, in his cultural-historical analyses of everyday technologies, describes the transformation processes with catchy contrasted images: from „toys to tools", from „luxuries to necessities", from „pleasure to comfort" or from „sensation to routine". These pairs describe the transformation from the first to the second phase where a product/ technology becomes normal and is used on a routine, non-reflected basis. The third stage ("art") however, breaks with normalisation pattern and users (actually very few of them) create untypical, individual usage patterns.

Normalisation studies focus on the typical, widely practiced and thus rarely reflected patterns and meanings of consumption. Recently, and especially within the discipline of sociology, **ordinary consumption** was coined as an expression to precisely focus on these aspects. As the editors of a book entitled "Ordinary Consumption" state, products such as gasoline, water or electricity are "mostly taken entirely for granted and without symbolic communicative potential" (p. 5),[70] and have thus been left out of the sociological research perspective. Even if we doubt that any given consumption activity can be devoid of communicative value, the main accomplishment of these studies is that they focus on unspectacular consumption processes, often fuelled by similarly unspectacular, unreflective or inconspicuous motives and symbolical meanings –a phenomenon usually neglected by prior research.

In our view though, the main problem of the literature on normalization/ordinary consumption lies around the **needs/ wants discussion**. When wants become needs, it is assumed that one can really distinguish between the two. Furthermore it is assumed that new needs had/ have to be invented together with new products. Mika Pantzar, for instance, argues that new commodities are rarely a response to some "basic need" and thus, that the "**invention of needs**" parallels the invention of a new technology.[71] This view resembles that of marketing or industries in general: „Consumers should not be stimulated to buy products but to have wants", as McWise, an Austrian marketing company formulates it.[72] However, this assumption has a negative undertone and resembles the product-centred image of the passive consumer who needs must be -and indeed are- dictated by the producer. We would therefore like to argue that normalisation should be defined in more neutral words, such as '**from new to normal**". And as regards the underlying motives for buying and using, one could apply more basic concepts along the lines suggested by Douglas and Isherwood. First, as far as the more functional aspects of a technology are concerned, the wish for a high personal availability combined with a large-scale consumption pattern and low-frequency activities often provide the motivation for consumption. Second, regarding symbolical aspects, it can be argued that (new) commodities represent (new) opportunities of expressing oneself.

In order to go beyond the usual binary reasoning along the poles wants vs. needs, luxury vs. instrument, emotional vs. rational, one could perhaps wish, in the future, for more studies, which from their inception do not take the functional satisfaction of needs as a starting point. This could, for example, be achieved by focusing on consumption practices related to leisure, sexuality or the body. For the „**homo ludens**" especially, the main function of consumption is

[70] Cf.: Gronow, Jukka; Warde, Alan (Eds): Ordinary Consumption. London, New York 2001.
[71] Cf. Pantzar, Mika: Inventing and articulating the need for domestic appliances - an exploratory study into the discursive reality of post-war Finland. Paper presented at the workshop "Mediating technologies: users and usage in the history of 20th century technology", Munich 14-16/12/2001, (cf.: http://www.lrz-muenchen.de/~designing-the-user/sf-workshop.html).
[72] Cf. http://www.mcwise.at/fuer52.html

emotional, because it is clear from the start that the emphasis is on the subjective value of experience and not on objectively tangible dimensions. The sociologist Gerhard Schulze provides some preliminary conceptual ideas to go beyond the needs vs. wants discussion in his work on the "**experience society**".[73] His main point is the increasing importance of an aesthetics of everyday life whereby each person tailors her/his consumption according to her/his personal aesthetic goals. Schulze's study is based on an empirical investigation of West Germany in the 1980s. The experiential orientation detected here is presented as qualitatively new, but one should perhaps bear in mind that this assumption could also be valid for historical studies, with a quantitative leap in the last few decades. Thus, to describe normalisation processes one could again resort to Scitovsky's **pleasure-comfort cycle** (cf. Chap. 2).

4. Bridging the gap between production and consumption

During the course of the 20th century, as a result of growing and increasingly differentiated markets, of mass production respectively mass consumption and of the increasingly scientific character of products and technologies, an ever widening divide has grown between the production and consumption spheres. This divide has contributed to considerable difficulties in the "translation" of a product, or more generally, in the communication between production and consumption. On the production side, marketing (including market research and advertising) was developed as a professional interface in order to provide for successful translation and communication. Moreover, retailing and maintaining/servicing institutions had to be developed to make mass production and consumption possible.

During these last few decades of academic research, consumption (hi)stories have also begun to focus on these intermediary fields. The resulting studies have thus gradually contributed to the bridging of the previous gap between academic production and consumption (hi)stories. In the following chapter, we will be presenting research which analyses the "communication" links, channels and mechanisms between consumers and producers. These studies mainly stem from innovation literature, STS, and historical research. Chap. 4.1. examines research that focuses on the more specific question of how user representations and general projections about future use influence design decisions. These studies mainly concentrate on the phase of innovation and analyse contemporary consumption, hence their main focus on ICT and related industries. In Chap. 4.2., we take a look at historical studies on the broader and more diverse field of the mediation of mass consumption. Altogether however, many of the studies considered cover both themes and most authors also emphasise the importance of social networks and agency, thus providing many links with Chap. 5. What is missing though, but might prove fruitful to gain further clues in the field of „bridging the gap between production and consumption", are studies on failed technologies, since the underlying assumption is that failure is a consequence of non-communication and/ or misunderstanding between production and consumption.

4.1. User representations, frames and scripts

The success of an innovation is often seen as depending on the ability of its innovators to generate **user representations** that are as fitting as possible and to integrate them into the design of the new technology. Thus, contemporary management and innovation literature

[73] Cf. Schulze, Gerhard: Die Erlebnis-Gesellschaft. Kultursoziologie der Gegenwart. Frankfurt 1992.

stress the importance of considering as many user dimensions as possible.[74] In reality, many industries are still lagging behind this ideal. Nevertheless, efforts to include the user in a number of ways during the innovation process have been increasing steadily. For instance, non-engineers -as they are supposed to share the perspectives of common users- are consulted for the design of user-interfaces, anthropologists are employed in marketing, and methods to gain knowledge about the user are constantly developed and refined.[75] With all these efforts concentrated on gaining rather detailed user representations, the question of the actual degree of user influence on technological development becomes very prominent.

In the first part of this chapter, we will be presenting studies which try to answer this question. The studies we retained in our review generally demonstrate that the influence of concrete user images is quite limited. Instead, relatively unreflected user images and general cultural assumptions often have a greater impact, which is why literature focusing on these aspects is discussed in the second part. The latter trend corresponds to the differentiation expounded by the sociologist Madeleine Akrich. She divides **user representation techniques** into **explicit** and **implicit** ones: the explicit techniques are based on special strategies such as, for example, market surveys, consumer testing and feedback on experience through contacts with after-sales services. Implicit techniques, however, are based on experience with similar or related products and on statements made solely on behalf of users e.g. by designers and experts who believe they share a "common/ lay user" understanding of technology.[76] If user representations influence the development of technology, one can formulate the question the other way round: how far then are uses suggested or even determined by consciously selected design characteristics. This is the question we wish to broach in the third part of the chapter.

Alan Cawson, Leslie Haddon and Ian Miles investigated the role of **knowledge about the consumer** in the generation of new products such as interactive CD-based media, text-based home electronic messaging and home automation products.[77] Furthermore, they wanted to understand how producers forge the link between R&D, product development, and marketing. The relevant interviews were conducted during the end of the 80s. The authors showed how producers develop knowledge and ideas about future consumers and how this knowledge in turn shapes the design process before the product actually enters the market. Leslie Haddon, for instance, explains how images about home automation of the 70s and 80s dramatically influenced the subsequent use scenarios of smart homes (cf. also Anne Jorunn-Berg on smart homes in Section 5.3, p.44f). Product ideas rarely originated from an analysis of users' wants but were instead technology-pushed or transferred from the professional and industrial markets, as in the case of commercial "intelligent buildings" that served as models for heating

[74] A recent example drawn from this particular stream of books is: Coombs, Rod, Green, Ken, Richards, Albert, Walsh, Vivien (Eds): Technology and the Market. Demand, Users and Innovation. Cheltenham, Northampton 2001. Themes include among others the construction of users in genetic therapy, vaccines, users' influence in the realms of food or renewable energy.

[75] The latest hit in this respect is the video documentation of individual consumption practices in the home, a practice that resembles former ethnographic inquiries in foreign cultures.

[76] Cf. Akrich, Madeleine: User Representations: Practices, Methods and Sociology. In: A. Rip, Th. J. Misa, J. Schot (Eds): Managing Technology in Society. The approach of Constructive Technology Assessment. London 1995, pp. 167-184. This article is based on three French case studies which were published prior to the above anthology (the "Coffret d'abonné", the "contact Ambiance" telephones and the "Securiscan" domestic computerized system). In it, Akrich also describes how for the different user representations, a socio-technical network alignment is achieved (e.g. designers can rely on the technical system itself, they can also delegate the reconciliation of interests to intermediaries like retailers who will conduct the adjustments between user and system, or a new network can be created).

[77] Cf. Cawson, Alan; Haddon, Leslie; Miles, Ian: The Shape of Things to Consume. Delivering Information Technology into the home. Aldershot, Brookfield, Hong Kong, Singapore, Sydney 1995. Cf. also their articles in Silverstone & Hirsch, op. cit., 1992.

and lighting control. Consumers only had a limited influence even on the evaluation of product ideas because some managers argued against consumer polls as long as no concrete designs could be presented. They believed that future visions might either prove too shocking for consumers or might even be beyond their perceptive realm. The book concludes that for each technology considered, consumer feedback was given little impetus in the early stages of product development. Instead, it was trends within core technologies and patterns of usage in industrial and professional applications which provided future consumption visions.

However, the role of consumer feedback might be seen to differ along technological and cultural lines. For example, it is often remarked that the Japanese market hardly uses any tests and trials: expensive products are put on the market and enthusiasts and so-called "early adopters" provide the initial feedback. This absence of marketing and concrete user images is clearly demonstrated by P. Kunkel for the case of the Sony Design Center, Sony's „idea factory".[78] Sony developed many „firsts" (e.g. a tape recorder in 1950 or the walkman in 1979) and to „do what has never been done before" is the strategy of one of Sony's leading designers. Thus, to take the most prominent example, the Sony Walkman was put on the market without anticipating any definite wish for a portable cassette recorder. It was only the interaction of user and walkman which generated this wish, which hardly any user questionnaires could have shown prior to the introduction of the walkman. It thus appears that the personal experience of designers and developers proved more influential than any marketing studies. In western companies, the latter are often used "to persuade the higher decision-making authorities to support the project, but (…) these studies are rarely consulted during the subsequent development phase", as Akrich concluded from her research.[79] Marketing, in this context, thus functions not so much as a means to mediate consumer wishes but rather as a strategy to support industrialists in their decisions.

The influence of general socio-cultural representations seems to be much clearer in the consciousness of engineers who design potential use scenarios. Inventors thus „invent both artifacts and **frames of meanings** that guide how they manufacture and market their creations" (p. 176), concludes Berhard W. Carlson in his study on Edison's Kinetoscope. Carlson argues for unreflected, more or less culturally dependent frames of meaning. Whereas the movie audiences and Edison's competitors within the new-born motion picture industry were already participating in the unfolding of 20th century consumer culture, Edison still worked within the framework of 19th century producer culture, unsuccessfully aiming at a business market and thus failing to reach the new mass film audience.[80]

Similar to Carlson's idea of "frames" is the concept of a technology's "**cultural landscape**", as recently suggested by Kotro and Pantzar: They define the "cultural landscape" as "the totality of cultural interpretations and meanings that are related to a specific product".[81] Using the examples of Suunto's wrist watches, Nokia's cell phones and Sony's latest electronic

[78] Cf. Kunkel, Paul: Digital Dreams: the Work of the Sony Design Center. Kempen 1999.

[79] Cf. Akrich, op.cit., p. 170. See also Haddon (ft. 74) in his research on home automation: "Within firms, a good number of such applications arose from the judgements of R&D staff, often reflecting what they would like in their own homes and what intuitively seemed to be marketable products." (p. 93).

[80] Moreover, Edison insisted on the use of the phonograph as a dictating machine. He had to be convinced by others to have phonographs installed as automats in penny arcades. Cf. Carlson, Berhard W.: Artifacts and Frames of Meaning: Thomas A. Edison, His Managers, and the cultural construction of Motion Pictures. In: Wiebe, E Bijker; John Law: Shaping technology, Building Society. Studies in Sociotechnical Change. Cambridge, London 1992, pp. 175-198. For a more detailed study of the phonograph cf. Sievert, Marsha: Aesthetics, Technology, and the Capitalization of culture: How the Talking Machine Became a Musical Instrument. In: Science in Context 8 (1995), pp. 417-449.

[81] Cf.: Kotro, Tania; Pantzar, Mika: Product development and changing cultural landscapes - Is our future in "snowboarding"? In: Design Issue (forthcoming, 2002).

portables, they argue that at the end of the 20th century, models and ideas for future products are taken out of contexts such as adventure, freedom, and self-realization - aspects that are represented in the striking "snowboarding" metaphor which they expound in their article. Moreover, designers orientate themselves by observing products from other industries. As a consequence, cultural landscapes emigrate from one industry to another, e.g. Sony integrated inputs from the sport, computer, or hearing aid industries or Nokia from producers of cars and watches. Suunto, Nokia and Sony, by each launching successful lifestyle products in the 90s, orchestrated a "cultural reinvention" of the watch, cell phone and music portables respectively, by applying visions from the cultural landscape of snowboarding which emphasises youth, freedom and borderline experiences. In the cases of Nokia and Sony, these fundamental changes were facilitated because of economic crises. According to the authors then, representations of the future user originated from three factors: from the product's history, from market research and from the cultural landscapes which designers contributed to develop.

In other texts, Pantzar also tries to argue that – with the creation of future consumer representations within the newest digital technology – "new versions of human beings" emerge, types who will succeed those which were created around key commodities such as cars and TVs.[82] Thus, Carlson's frames seem more loosely defined and mainly contrast producer vs. consumer culture and middle-class values vs. the wishes of a mass audience. Pantzar and Kotro's "cultural landscape" is thought to -ideally- grasp the "totality" of potential cultural interpretations. Empirically and in the case of the latest consumer electronics, this landscape is argued to be dominated by more or less "transcultural" values, which are however centred around adventure and self-realization. Therefore, one could ask, whether and why other cultural elements which designers also participate in have little influence, such as e.g. their personal/ local culture.

Whereas the literature above asked whether and how knowledge about users, representations of prospective users and, more generally, hardly reflected socio-cultural values seeped into the design of artefacts, Akrich's concept of "**scripts**" takes the reverse perspective (from the technology to the user) and assumes that conditions of usage -which usually correspond to certain user representations- are objectified in technologies. Akrich, as a researcher rooted in the Actor-Network-Theory (ANT), interprets artefacts/ technologies as non-human actors which prescribe the behaviour of their (human) users. Thus, things AND people are shaped during the innovation process.[83] Innovators inscribe their visions and predictions of the world in their objects, resulting in a "script". The "script" metaphor refers to a film script because both define a framework for future actions. For Akrich, "a technical artifact can be described as a scenario replete with a stage, roles, and directions governing the interactions between the actors (human and nonhuman) who are supposed to assume those roles" (p. 174). Many design choices can thus be seen as "decisions about what should be *delegated* to the technology and what should be left to the initiative of human actors" (p. 216).[84]

---

[82] Cf. Pantzar, Mika: Consumption as Work, Play, and Art: Representation of the Consumer in Future Scenarios. In: Design Issues: Vol. 16, N 3, 2000, pp. 3-18.

[83] Akrich favors ANT as she argues against the dividing of the social and the technical as it becomes apparent in SCOT (social construction of technology). Cf.: Akrich, Madeleine: Beyond social construction of technology: The shaping of people and things in the innovation process (1992). In: Dierkes, Meinolf; Hoffmann, Ute (Eds): New Technology at the Outset. Social Forces in the Shaping of Technological Innovations. Frankfurt 1992, pp. 173-190.

In later articles, Akrich uses the term „actant" to refer to (human and non-human) actors in order to avoid terms that assume a distinction between the technical and the social.

[84] Cf. Akrich, Madeleine: The De-Scription of Technical Objects. In: Bjiker & Law (Eds): Shaping Technology, Building Society, op. cit., pp. 205-244, here p. 216. Another famous example of this delegation is Bruno

Therefore the balance of power relations within this framework is clarified: the power definition lies on the production side. But Akrich's users do not necessarily have to behave according to plan, and in her examples, drawn from technology transfers to emerging economies, this leads to frustrations on both sides: E.g. photoelectric lighting kits were equipped with a fixed wiring, which meant that they could not be adopted to the personal space requirements of users. Additionally, as a kind of "social control", the batteries of these kits were supplied with a regulator that cut off the current when the charge on the battery got too low to prevent technical disorders. In many cases, the users, who required more flexibility, helped themselves with overbridging wires, which means that they counteracted the scripts. But this strategy also entailed that the kits did not prove a success for either producer or user, especially without the assistance of a form of mediation between the two poles. Whereas the industrialists argued that the kit did not work technically because it was misused socially, the users and their representatives argued that it did not work socially because it had been misconceived technically.

Another approach to clarify the influence designers want to exercise on users through design can be seen in Steve Woolgar's metaphor of the „**machine as a text**":[85] The process of the construction of a machine is paralleled with the "writing" of a text, the machine's use with the "reading". In the produced text/machine, the user is configured, i.e. future requirements about and actions of users are predetermined and instructions for interpretation are encoded. However, as in any text, some interpretative flexibility is left to the reader/ user. The use of a technology then becomes an activity that is also dependent upon the knowledge of the user.

However, the missing part in these metaphors of "script" and "text", as well as "frame" or "cultural landscape", is the dimension of the user-object-relationship during a long-term appropriation. For Akrich, the script will most likely become the major reference to interpret the user-object-relationship, unless users decide to radically question the new technology. Nevertheless, these metaphors, and especially Akrich's „scripts" concept, have proved fruitful in a number of consumption studies and have often been integrated, expounded and enlarged. For instance, so-called physical scripts embedded in the physical and technical shape of an artefact are distinguished from more flexibly defined socio-technical scripts leading to the concept of "**interpretative flexibility**", which was also alluded to in Woolgar's "text" metaphor.[86] Stephan Beck's differentiation between "**co-" and "con-text"** also rests on similar considerations, with the conditions of usage ("Nutzungsbedingungen") resulting from material and technological constraints, and the instructions for use ("Nutzungsanweisungen") from discourse (cf. Section 3.1). Other researchers have also tried to combine the appropriation/ domestication approach with Akrich's scripts. Finally, every study on appropriation/ domestication is based upon the assumption of an interpretative flexibility of artefacts as a precondition for their adoption into a particular setting. Pantzar argues for the coexistence of configuring and appropriating because he sees scripts as allowing for different

---

Latour's "Berlin key": It is designed in such a way that after unlocking the main entrance door, you have to push it through the lock; then, on the other side, you can only take it out of the lock by turning it and thus locking the door behind you. Thus, the key itself includes –s a kind of non-human actor- the locking of the door. Cf.: Latour, Bruno: Der Berliner Schlüssel : Erkundungen eines Liebhabers der Wissenschaften. Berlin 1996.

[85] Cf. Woolgar, Steve: Configuring the User: the case of usability trials. In: Law, John (Ed.): A Sociology of Monsters: Essays on Power, Technology and Domination. London, New York 1991, pp. 57-99. This study is based on the usability trials of a microcomputer that was designed on the basis of the then new 286 chip. The tests were documented by audio and video records.

[86] It should however be stressed that the term „interpretative flexibility" originates in SCOT studies: here, it refers to the many evolutionary possibilities in the early stages of technical development before the actual closure of the innovation phase crystallises.

scales of interpretative flexibility. First, there are **scripts for "correct consumption"** as suggested by advertisers or public discourse (which, in contrast with Akrich's scripts are not inscribed in a technology but ascribed). Secondly, there are **"open" scripts** that can be transformed by users, as was the case with the SMS technology that was used for unforeseen purposes, and thirdly, there are **"closed" scripts,** such as in the case of the freezer which doesn't allow for many opportunities besides freezing.[87]

In any case, the investigation of scripts, texts and interpretative flexibility relates back to the previously raised question of artefacts as potential sources for consumption research. We feel that a combination of this reflection and inputs from the socio-semiotics field, which we discussed above (cf. Chap. 3.2.), might provide some very promising synergies for both research contexts.

4. 2. Mediation through retailing, marketing, advertising, etc.

During the 20th century, many links and channels have developed between consumers and producers, links which have functioned as prerequisites for mass consumption and production. The most obvious field of mediation for mass consumption is **retailing** outlets, which have undergone a lengthy process of differentiation. Department stores have received much historical attention up till now, whereas other retailing channels (e.g. drugstores, health food or electrical supplies stores) have hardly been considered to this day. Department stores emerged at the end of the 19th century (with a main development phase between 1880 and 1914 in European countries) as new spaces of consumption that also offered services such as child care or branch libraries. These spaces were widely debated by contemporaries. However, one of the latest studies contends that the department store was less novel and less homogeneous than contemporary discourse tends to suggest. Furthermore, it should be kept in mind that only a minor part of private budgets was actually spent in department stores.[88] After WWII supermarkets were more widespread, and the self-service that they promoted developed into an altogether new form of shopping practice.[89] In recent years, the **places and spaces of consumption** have also increasingly become a research focus in the field of geography.

Direct sales as a retailing mode more or less vanished during the course of the 20th century and very few industries still employ **door-to-door agents**. Tupperware parties are legendary in this field, and the cultural meaning of the Tupperware itself is largely connected to this retailing form and post-war suburban lifestyles, as Alison Clarke, in particular, pointed out.[90] Tupperware parties, which provide the only arena where Tupperwares can be sold, are meant to fit into women's social and domestic life and represent an informal, ritualistic form of

[87] Cf. Pantzar, Mika, op.cit., 2001.

[88] It is estimated that the share, in the overall retailing turnover, of department stores in Europe in 1930 was around 5%. Cf. Crossick, Geoffrey & Jaumain, Serge (Eds): Cathedrals of Consumption: The European Department Store, 1850-1939. Aldershot, Brookfield, Singapore, Sydney, 1999, p. 4. This article collection offers, among other things, insights into the similarities of and differences between various 18th century retailing outlets, an overview of German department stores (1870-1914) as well as of department stores in Budapest, not to mention gender aspects such as the frequently thematised phenomenon of female thieves.

[89] Wildt, op. cit., 1994, refers to the development of self-service retailers. For Switzerland, cf.: Brändli, Sibylle: Der Supermarkt im Kopf. Konsumkultur und Wohlstand in der Schweiz nach 1945. Wien 2000. The first part of the book analyses the introduction of self-service shops by Migros, a consumer cooperative society, after WW II. The subsequent parts provide insights into the conceptualisation of and discourses on the "consumer".

[90] Cf.: Clarke, Alison J.: Tupperware. The Promise of Plastic in 1950s America. Washington, London 1999.

economy. Furthermore, these parties are supposed to encourage women to establish some sort of local network.

For technical artefacts, **maintaining and servicing** are other important preconditions for mass consumption.[91] During the first half of the 20th century, crafts shops turned into important service stations for consumers since they could provide the necessary expertise and services to facilitate technical consumption. Thus, it can be said that small scale business translated the mass production of consumer durables into mass consumption. The literature on the history of small scale business has already pointed out this shift,[92] but its insights have unfortunately not yet made their way into consumption history.

In recent years, gender historians and historians of technology have done substantial research on the role of **professional agents**, in particular women in the roles of company advisors, municipal housekeepers, home economists or as members of women's organisations, in the negotiation of gas, electricity and new household appliances with housewives (or with house maids in the early decades of the 20th century).[93] Often, these professional women are also conceptualised as **spokespersons for the consumers** through which women gained some influence on the shaping of technology. Ronald Kline thus interprets them as "**agents of modernity**" (cf. also Section 5.3).

However, the main focus in consumption history literature lies on marketing, or more precisely on advertising. As a profession and academic discipline, **marketing** is nowadays understood as the planning, coordinating and controlling of a firm's policy and activities in relation to its products. It integrates research and production, communication and advertising, distribution and retailing. As we mentioned in Chap. 4.1., marketing studies mainly function as a reaffirmation of producers' influence and thus, will not be considered further here. Moreover, literature on the history of marketing as a profession is still rare.[94]

In contrast, there are many studies on the history of **advertising** - the most publicly obvious branch of marketing.[95] Their perspectives range from the analysis of the artistic aspects of different advertising media (e.g. billboards, films, etc.), through the advertising for a specific brand product or product group, to the institutional development of the profession.

---

[91] Cf. Reith, op. cit.

[92] Cf. Wengenroth, Ulrich: Small-Scale Business in Germany: The Flexible Element of Economic Growth. In: Odaka, Konosuke & Sawai, Minoru (Eds): Small Firms, Large Concerns. The Development of Small Business in Comparative Perspective. Oxford 1999, pp. 117-139. Cf. also: Spiekermann, Uwe: Basis der Konsumgesellschaft. Entstehung und Entwicklung des modernen Kleinhandels in Deutschland 1850-1914. München 1999.

[93] Cf. for the special case of women's influence on household technology in the GDR: Zachmann, Karin: "A Socialist Consumption Junction. Debating the Mechanization of Housework in East Germany, 1956-1957". In: *Technology and Culture*, Vol. 43, Nr 1 (January 2002), pp. 73-99. For the mediation of household technology by (German) women's organisation., cf. Hessler, Martina, op. cit. For the role of home economists, cf. Goldstein, Carolyn M.: Part of the Package: Home Economists in the Consumer Products Industry , 1920-40. In: Stage, Sarah & Vincenti, Virginia B. (Eds): Rethinking home economics: Women and the history of a profession. Ithaca, London 1999, pp. 271-296. In the same book cf. also Kline, Ronald: Agents of Modernity: Home Economists and Rural Electrification, 1925-1950, pp. 237-252. For the negotiating of gas and electricity, cf. Rose, Mark H.: Getting the Idea Out. Agents of Diffusion and Popularization of Electric Service in the American city, 1900-1990. In: Plitzner, Klaus (Ed.): Elektrizität in der Geistesgeschichte. Bassum 1998, pp. 227-234.

[94] For the German context, cf. Hansen, Ursula & Bode, Matthias: Marketing & Konsum. Theorie und Praxis von der Industrialisierung bis ins 21. Jahrhundert. München 1999. This textbook however only considers the development of the academic discipline in regard to its leading theories.

[95] For an overview of recent German publications on advertising history, cf. Dussel, Konrad: Wundermittel Werbegeschichte? Werbung als Gegenstand der Geschichtswissenschaft. In: Neue Politische Literatur 42 (1997), pp. 416 – 430.

Increasingly, historians also use the contents of past advertising as a source for recapturing the beliefs and intentions of advertising agents, and more generally, for the general mentality of the time. This is a consequence of a changed attitude towards publicity: advertisements are no longer interpreted as the "hidden persuaders", which secretly slither into the unconscious of consumers to influence them, as Vance Packard describes the phenomenon in his classic critique of the American consumer culture. Rather, they are seen as a kind of distorted mirror of their times, which use their own code system. Roland Marchand, in his now classic "Advertising the American Dream: Making Way for Modernity" (1985), used this metaphor to point to the fact that advertisers enhance certain images because of their pragmatic aim, i.e. to sell as much as possible, because of general underlying social values or because they have certain user images in their heads. Bearing this in mind, the author used ads of the 1920s and 1930s –a period during which advertisers saw themselves as "missionaries of modernity"- to describe the typical American everyday life and standard beliefs.[96] Pamela Laird, in her book "Advertising Progress", enlarges upon Marchand's study by focusing on the first two decades of the century.[97] During this time, advertising became professionalized. Whereas early ads resulted from direct contact between the advertiser, i.e. the person paying for the ad, and the communication producer (i.e. the printer, sign maker or publisher), in later years advertising agents or specialised employees were increasingly called upon to place newspaper or magazine ads for nationally marketed brand-name consumer goods.[98] Laird's main conclusion is that during this process, marketing and advertising agents' main orientation was towards producers since these were seen as the buyers of their ads.

For the German context, the study of Dirk Reinhardt is a valuable reference book to trace the development of advertising institutions. It contains a lot of data on advertising agents, the media used (newspaper ads, posters, display windows, neon publicity, films, the radio), and on the more general reception of publicity on the consumer side.[99] One could also mention Michael Kriegeskorte's history of mentalities based on the analysis of a century of German (printed) advertisements.[100]

Cultural studies also have recourse to publicity as empirical material, because advertising is seen as a **main channel of meaning ascription**. Here again, as in the case of the meanings of artefacts (Chap. 3.1. and 3.2.), semiotic tools are used to decode the images and texts of

[96] Cf. Marchand, Roland: Advertising the American Dream: Making Way for Modernity, 1920-1940. Berkeley, L.A. 1985.

[97] Cf. Laird, Pamela Walker: Advertising Progress. American Business and the Rise of Consumer Marketing. Baltimore 1998. For Laird, ads are „elements of material history" (p. 8).

[98] Trendsetters for this development were inexpensive goods like soap, processed food, cigarettes or drugs. Additionally, showmanship, like that of Barnum, had a lot of influence on advertising practices. It should be noted that the professionalization of advertising in other countries occurred much later. For instance, in Germany, at the end of the 1950s, less than a third of all publicity ventures were professionally supervised. Cf. Gries, Rainer: „Ins Gehirn der Masse kriechen!": Werbung und Mentalitätsgeschichte. Darmstadt 1995, introduction, footnote 12. This book includes articles on publicity slogans and lyrics of the 1950s, on Shell's promotion using street maps, on advertising for the NATO, and on the meanings of former GDR products. The introduction provides interesting insights on the implications of using ads as sources for a history of mentalities.

[99] Cf.: Reinhardt, Dirk: Von der Reklame zum Marketing. Geschichte der Wirtschaftswerbung in Deutschland. Berlin 1993. Reinhardt defines advertising as the "fundamental communicative structure of both economic and social life" (p. 17). This study was recently supplemented by Christiane Lamberty for the decades around the turn of the century. She describes in detail advertising in the retail trade, the strategic positioning of various media, the professionalization and increasingly scientific character of advertising ("Reklame" as it was then called), as well as the hostile attitudes and fundamental debates of the time. Cf. Lamberty, Christiane: Reklame in Deutschland 1890-1914. Wahrnehmung, Professionalisierung und Kritik der Wirtschaftswerbung. Berlin 2000.

[100] Cf. among others: Kriegeskorte, Michael: 100 Jahre Werbung im Wandel: eine Reise durch die deutsche Vergangenheit. Köln 1995.

advertisements. „Advertising is the cultural language which speaks *on behalf of* the product. Advertising makes commodities speak" is the underlying assumption of "Doing Cultural Studies. The Story of the Sony Walkman" (1997), a cultural studies textbook, which, using the example of the Walkman, wants to provide a vademecum for good practice and methods within the discipline.[101] Here, the deciphering of the Walkman unfolds through the decoding of advertised images, a fact which may surprise the reader, since the authors profess to engage with cultural studies with much broader and higher demands than ever before. The authors base themselves on a "circuit of culture", characterized by a constant dialogue between production and consumption in the ongoing cycle of commodification and appropriation -a concept close to the theme of mediation, as discussed below. Nevertheless, in this study, we learn very little about how meaning ascription actually functioned outside Sony's PR department, and how the users themselves contributed to this process. Meanwhile, the fact that meaning changed over time and space is stated quite clearly. During its release conference, the walkman was described as a "smallish stereo-headphone cassette-player" but during the diffusion phase, it began to connote youth, entertainment and to symbolise Japanese technology, mobility and urban nomadism. For cultural critics however, the walkman represented alienation, distraction and the atomising of society. For users, this technology often meant "escape" or "distraction", but also "a heightened experience", or, as in the case of Chinese youngsters, a form of political resistance to public loudspeakers.

In sum, the "Doing Cultural Studies" approach can be seen as an attempt at linking the fields of **conception and design on the producer side**, with **practices on the consumer side** and **publicity**. Mackay and Gillespie have suggested a similar scenario in a (theoretical) article that aims at enlarging the usual „Social Shaping of Technology" approach by merging it with a cultural studies perspective.[102] They argue that, for an analysis of technology, three different spheres should be heuristically differentiated: 1. the conception and development on the producer side during which a functional and symbolical encoding, be it intentional or not, takes place, 2. the marketing of the technology and 3. the appropriation by users. Their main thesis is that production and consumption must be linked since users take part in the shaping of technology through appropriation. Moreover, their appropriation is not predetermined because most technologies are polysemic and can only suggest „preferred readings".

The mediation concept which is currently developing seems to be pointing in the same direction, because it seems to provide the most concrete strategy to grasp the interaction between consumption and production. The term „**mediation**" covers the various agents and channels to be found in the continuum between production and consumption, that is where the negotiation of mass consumption takes place. Intermediaries could be fairs, the media, shopping outlets but also designers, shopkeepers, salesmen, experts, consumer leagues, security and normalisation institutions, user trials or polls etc. For the case of consumption of technology in post-War Netherlands, Adri de la Bruheze, Onno de Wit and Marja Berendsen have been working on a conceptualisation of this new approach: They define mediation as the "field between consumption and production" and they compare it to a forum where agents can move in and out. In their empirical-historical studies they focus on the kitchen, the transistor radio and the snacks culture in the Netherlands.[103] In general, historical literature on mediation themes analyses the **mutual influences between production and consumption**

[101] Cf. Gay, Paul du, Hall, Stuart, Janes, Linda, Mackay, Hugh & Negus Keith: *Doing Cultural Studies. The Story of the Sony Walkman*. London 1997, p. 25.
[102] Cf. Mackay, Hughie; Gillespie, Gareth: Extending the Social Shaping of Technology Approach: Ideology and Appropriation. In: Social Studies of Science (22) 1992, pp. 685-716.
[103] Cf. de Wit, Onno, de la Bruhèze, Adri A. & Berendsen, Marja: Ausgehandelter Konsum: Die Verbreitung der modernen Küche, des Kofferradios und des Snack Food in den Niederlanden. In: Technikgeschichte (68), 2001, pp. 133-155.

and examines **actors and agents**.[104] Therefore, mediation, as most of the previously introduced approaches and theories, will also be thematised in Chap. 5.

In the research on mediation, discourses -mainly written, for obvious accessibility reasons- are often examined as the main sources for historical enquiry to see which understandings of a technology have been textually supported. The danger with this practice is that the objects themselves are often left out of the field of perception. To describe how users' experience of a technology is fore-structured through media discourses, Mika Pantzar introduced the term „**hypermediation**".[105] This phenomenon becomes particularly obvious in Hessler's study (mentioned above), which focuses on the early 20th century. In contrast to later decades, the diffusion of a technology spread over a relatively long time span. Because of the contemporary discourses emanating from different agents, future consumers knew about and were familiar with the electrical appliances of the 1920s and 30s even before they could actually purchase/ use them –actually many families first gained access to these appliances in the context of the so-called "affluent society" of post-war years.

To sum up the gist of this chapter, the mediation approach is certainly a fruitful concept to describe the mutual shaping processes between consumption and production and it also allows for a healthy critical distance from one-sided technological development narratives. Obviously, it will still require some conceptualising work as, in its effort to include as many aspects as possible, several blind spots and questions arise. For example, what is the difference between the mediation and the popularisation of a technology? Or, can artefacts be considered as mediators?

5. Controversial agency

This chapter marks a stylistic break in our review, in the sense that fewer contributions are examined but with a more in-depth perspective to try and map out various subtle strategies of apprehending agency. Many of the concepts elaborated on in the previous chapters are taken up here from a different angle. Section 5.1. examines the problematic definitions of actors and agents. Section 5.2. looks into the various theories that claim to unravel and measure the extent and depth of what one could call entangled agencies within the consumption junction. Finally, section 5.3. suggests that a gendered perspective on consumption provides crucial insights on the balance of power, concretely displaying the negotiations over agency, in terms of stakes, subjectivities, identities and definitions.

5.1. Actors and agents: mapping the politics of consumption

Questions of appropriation, domestication and mediation are intimately tied to the concept of agency and the various forms it can take. Before going any further it may prove helpful to clarify the distinction between actor and agent. We understand actor as a person- or institution-bound subjecthood, entailing affiliations to various groups (an actor can be a member of several socio-political configurations, such as families, associations, parties, etc. performing various roles, whilst retaining a "stable" identity, whereas an agent is seen as a functional or role-bound subject whose identity can vary (the role of the agent is taken over in specific circumstances by specific actors, but the identity of agents cannot be deduced beyond

[104] Cf. our workshop: Mediating technologies: users and usage in the history of 20th century technology in Munich, Dec. 2001: http://www.lrz-muenchen.de/~designing-the-user/sf-workshop.html
[105] Cf. Pantzar, Mika, op. cit., 2001.

their roles– i.e. fixed role/ various actors). The mapping of various actors belonging to different groups in different locations and the network[106] formed by the interaction of various types of agency then provides the basis to describe and analyse the negotiation processes over the shape of a technology from its inception to the various practices of usage (or non-usage) it entails/generates. The distinction between actors ranges from their representations and interactions on an abstract level, for example in the contrasted user profiles compiled by marketing or design departments, to concrete, sometimes even unforeseen actors, whose practices immediately impact the shape of a technology. In the following section, we aim to move from the analysis of theoretical user projections to the analysis of concrete case studies centred on the assimilation of new technologies. We thus concentrate on contributions which aim to map out the agency of the various actors involved in the consumption of technology, with a particular emphasis on the role and shape/depth of user agency.

5.2. Consumption of technology and the user: shaping, construction, subversive use or co-production?

As we fleetingly mentioned it in Section 2.1., the theoretical framework of **SCOT** (social construction of technology) forms the basis upon which a number of authors apprehend the mapping of constellations surrounding the consumption of particular technologies. In a nutshell, SCOT was developed in reaction to a deterministic view of the evolution of technology in society. It stresses the importance of various actors' agencies, within a **seamless web**, who **flexibly interpret** a new technology until the stage where **closure** occurs and the technology stabilises or crystallises into a particular form. This process occurs within the socio-technical system it is embedded in, which renders it all the more difficult to alter.[107]

Lara Tauritz in her paper on the adoption of the ergonomic chair[108] makes a convincing case for the application of SCOT. This framework enables the researcher to distinguish and describe new categories of **relevant social groups**, such as in this case ergonomists (whose knowledge and praxis draws on various disciplines such as occupational psychology, anthropometrics, biomechanics, etc.). It also highlights the particular agency of actors in a particular configuration, here the gradual development, adoption and adaptation of the desk-chair. For example, by means of an historical flash-back on the status of chairs, Tauritz is able to delineate the function of executives in shaping a particular type of broad, high-backed office chair: the executive chair, the ergonomics of which can then be questioned. Later on, the enrolment of women in office-work, means that an additional actor, i.e. the government, legally intervenes by establishing norms and standards for seated work in order to "protect" a category of workers considered more fragile (previously, office work was performed mainly by male clerks, who worked standing rather than seated). This intervention thus contributes to a form of **closure** or at least **stabilisation** in the shape and assimilation of the desk chair technology. The limits of the application of this theory however is that it does not provide a good inroad into the analysis of the impact of users. The author dismisses their impact by stating that users' opinions are almost always mediated by other actors, that the adoption of a particular chair is more due to the influence of intermediary buyers and that, even in interviews, users rarely seem to reflect on their practices of usage. Therefore, the main problem we seem to encounter with SCOT, certainly as it is applied here, is that it does not

[106] For more information on ANT (actor-network theory), please turn to chap. 2.

[107] For more information on SCOT, cf. e.g. The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology, Eds Bijker, Wiebe E., Hughes, Thomas P., Pinch, Trevor J., Cambridge (Mas.) & London 1989.

[108] Tauritz, Laura, "Sitting pretty: Social construction of the ergonomic chair", Autumn 2001, SHOT paper.

adequately account for the dynamics of power relationships during the domestication of a new technology.

Ronald Kline and ***Trevor Pinch***, who have both used and significantly influenced the SCOT perspective in previous studies, also include it as a basic analytical model in their analysis of the adoption of the automobile in the rural United States.[109] However, they immediately adopt a more critical attitude towards its shortcomings. The problems they identify are that **SCOT mainly deals with the design stage**, that its notion of closure is too rigid and to some extent deterministic (e.g. black boxes can be reopened and interpretative flexibility can be regained by, for example, other social groups at a later stage), that, as we mentioned above, it glides over issues of social structure and power relations (and thus gender…), and finally that it neglects the reciprocal relationship between artefacts and social groups. The authors describe the introduction of cars (especially the Ford Model T) in rural areas and the type of active resistance it first encountered from inhabitants, underlining what impact **non-users** might have had on the dissemination of cars, had this opposition gathered increased momentum.

Then they analyse the gradual shift of influence between various actors appropriating **interpretative flexibility**. Negotiation power moved from manufacturers to farm men and women before being eventually totally controlled by manufacturers. From its introduction in rural areas, the car provided much more than transportation: it was used as a general source of power to run other farm and household technologies (from corn shellers to butter churns, snowmobiles or tractors).[110] Pinch and Kline then go on to outline the impact of manufacturers and three other relevant social groups, farm equipment manufacturers, gasoline-engine firms and accessory companies, on the evolution of this interpretative flexibility. Reactions ranged from passive resistance (most manufacturers except Ford) to active encouragement (marketing of power extraction kits). Gradually, in a concrete display of power, manufacturers both exerted pressure on car retailers to stop selling kits and progressively widened their offer to include trucks and tractors so as to replace some of the functions of what had become a multifunctional car. Thus, the stabilisation of the rural automobile occurred by means of a complex web of agency. Ultimately, the gradual closure of interpretative flexibility crystallised in the early 50s, because farm people had by then bought many tractors and pickup trucks. Nevertheless, the development of these artefacts can mainly be traced back to the reaction against what was perceived as a **subversive use** of automobiles. Thus, "the users, so easily overlooked in writing the story of technology, had made their mark."[111]

The next example highlights even further how the dynamics of subversive power can be apprehended. Drawing on Giddens's **structuration theory**, ***Kevin Borg***'s article on the "Chauffeur Problem"[112] provides a very convincing argument on the power of a particular user group to alter the course of technological development in the early automobile era

[109] Kline, Ronald & Pinch, Trevor, „Users as Agents of Technological Change : The Social Construction of the Automobile in the Rural United States", *Technology and Culture*, 37 (1996): 763-95.

[110] It also served to reinforce the existing gender division of labour. Farm men more than women would tinker with the car, whereas women did use the car to some extent as an emancipatory tool (selling and buying goods outside the home, increased social life, etc.), but always in a "supportive" as opposed to an "income-producing" role. But from Pinch and Kline's analysis, it appears that farm women's active or direct role in the gradual closure of interpretative flexibility was limited, since it had mainly been farm men who had actually carried out the necessary mechanical adaptation of the automobile to obtain power, even for household technologies such as the washing machine.

[111] Ibid., p. 795.

[112] Borg, Kevin, „The „Chauffeur Problem" in the early Auto Era: Structuration Theory and the Users of Technology", *Technology and Culture*, 40 (40): pp. 797-832.

(1910s), this time from a more urban perspective. The chauffeur problem provides an interesting example of what can be called **subversive use**: the switch from coachmen to professional chauffeurs, as innocuous as it first appeared, promoted an entirely different constellation around the automobile in use. Chauffeurs were not drawn from the same social milieus as coachmen. Their class consciousness and mechanical knowledge meant they were not prepared for a subservient position: "they extorted commissions and kickback from garage owners, took their employers cars out for joyrides at all hours and exhibited a brazen disregard for social decorum. They did not behave as servants."[113] Borg uses structuration theory to analyse the emergence and closure of this phenomenon, whereby the duality of structure means that "the structural properties of social systems are both medium and outcome of the practices they recursively organize. That is, **the rules and resources that make up the social structures that guide human social interaction are themselves the product of knowledgeable human agency**. Therefore, '**human agents always have the ability .. to act at odds with such structures… and thus to undercut or even to initiate change in the structures**'. The ability to act at odds with or change a given structure depends, according to Giddens, on the willingness of others to replicate the new behaviour or on the ability of situated actors to mobilize power-granting resources in support of it."[114] The introduction of a new technology in this context, acts as a destabilizing force within existing social structures and provokes the development of counter-forces. Therefore, structuration theory offers a good alternative to analyse socio-technological change from a **user-oriented perspective**.

The substitution of chauffeurs for coachmen meant that chauffeurs entered a fore-structured arena (or a crystallised structure), where relationships were clearly defined and resources allocated. But the car as a new artefact entailed other requirements: a certain knowledge of mechanical maintenance, which was relatively rare and expensive, since there were almost no independent auto repair businesses. This institutional lack meant that mechanical knowledge became a new **authoritative resource**[115], which chauffeurs readily appropriated in order to consolidate their position in the new constellation.[116] Thus, **agency here is defined as the capacity of individuals to understand what they do while they do it: they have knowledge both practical and discursive on the social world and structures where they operate**. It therefore took a certain time for new legal, educational and bureaucratic changes to curb the development of the chauffeurs influence. But these changes were also supported by the economic imperative of a broader market for the car, which meant that prospective owners who could afford a low to moderately priced car could not afford or did not desire to hire a chauffeur. Technological aspects in turn reinforced the crystallisation of a new structure. The condition of roads improved and cars became more reliable, which entailed less demands on chauffeurs' mechanical knowledge. Finally a wider array of independent repair outlets meant that their knowledge was no longer indispensable. If chauffeurs reacted late and ineffectively, it is mainly due to their inferior access to authoritative resources which meant that they were not able to counter the moves of motorists and their allies. Borg draws on Sewell's concept of "**deep structures**" as opposed to "**surface structures**", the former generating and controlling the expansion of the latter, to explain why the subversive constellation did not endure beyond the 1910s. The surface structure represented by chauffeurs' temporary empowerment would have required considerable additional resources

[113] Ibid. p. 797
[114] Giddens as quoted by Borg in ibid. p. 799
[115] in the sense of command over persons, as opposed to an allocative resource, as control over things
[116] „Wealthy motorists' expectation that they could leave their chauffeurs in charge of their cars, while knowing almost nothing about the machines themselves, gave chauffeurs the freedom and resources to challenge their imposed servant status. Chauffeurs used their knowledge of the new technology to stake out as much material and social space for themselves as possible. " in ibid. p. 809.

to counter the deep structures of the underlying American notions of private property and wage labour capitalism.[117]

Borg then goes on to very interestingly contrast the inputs generated by the use of structuration theory as opposed to large technological systems (LTS) theory (mainly Hughes), semiotics (mainly Mackay and Gillespie[118]) and social constructivism (SCOT/ Pinch & Bijker). Perhaps the most relevant comparison is that between Giddens and semiotics, because Borg draws on the example of Pinch and Kline's rural automobile, we have just quoted above. A new, **polysemic** technology is strongly influenced by the particular context of adoption and use. Users such as farmers who viewed themselves as good all-rounder tinkering mechanics did not imbue cars with the same meaning as wealthy urban motorists did. Additionally, rural gender constructs (including the division of labour) were deep, powerful structures antedating the automobile, which meant that in this context, the automobile reinforced these structures:[119]

"[…] the SCOT model's continuing primary focus on the artifact leads Kline and Pinch to characterize the car as stable and rural uses of it as "new"—at least to farmers. Farmers had existing schemas about the user of power on the farm that they had derived from the use, or observed use, of early steam tractors and stationary steam and gasoline engines. They tried to fit the new technology of the automobile into older schema or practices in much the same way that wealthy urban motorists had done. The net result is the same from either theoretical viewpoint. This example merely emphasizes that they are different -and complementary- perspectives."[120]

Borg by using structuration theory has thus shown "[…] **how new technologies can inject destabilizing resources into previously stable sociotechnical structures, and how social groups composed of situated actors can mobilize to either exploit or contain the implications of the new technology**".[121] However it should be stressed that consumption in his example is closely embedded in a narrative of professionalisation and becomes a means to highlight the emergence of a new social group as well as its gradual negotiation and acquisition of resources. Significantly then, this contribution provides a provocative perspective on a group of consumers, who are not the owners of a particular technology but its professional users. The tension inherent to the owner-user couple, as in the above case, or more generally between actors with unequal resources provides a good basis to examine the balance of power relationships as a crucial determinant of agency, thus echoing ***Michel de Certeau***'s concept of **subversive use**.[122]

Subversive use is underpinned by users ability to **tinker** ("bricoler") in the praxis of consumption even when the room to manoeuvre is extremely limited. This particular resource of consumers can be termed the '**tactics of consumption**, the ingenious ways in which the weak make use of the strong, [which] thus lend a political dimension to everyday practices."[123] The **consumer, as a creative and cunning individual**, but without the benefit

[117] Cf. ibid., pp. 823-824.
[118] One could argue here that Mackay and Gillespie do not strictly inscribe themselves in the semiotics tradition but provide, among other inputs, a bridge towards semiotics from the social shaping of technology perspective.
[119] Cf. Gray's conclusion, as presented in Section 3.3. on p. 19, which shows that the new VCR technology finally reinforced deep rooted gender roles in domestic leisure behaviour.
[120] Ibid., pp. 829-830.
[121] Ibid., p. 832.
[122] De Certeau, Michel, *The Practice of Everyday Life*, Berkeley, Los Angeles, London, 1984.
[123] Ibid., p. xvii.

of a "**proper**" (i.e. a spatial or institutional location)[124] resorts to spur-of-the-moment tactics in her/his arts of using ("arts de faire") to counter the **long-term strategies** of producers who are anchored in a recognized, defensible locus. The effectiveness of the user's subversive agency is entirely dependent on her/his temporary usurpation of space by manipulating time, thus a tactic "has no base where it can capitalize on its advantages, prepare its expansion, and secure independence with respect to circumstances. […] a tactic depends on time- it is always on the watch for opportunities that must be seized 'on the wing.' Whatever it wins, it does not keep."[125] This is particularly well illustrated by the chauffeurs' example quoted above: chauffeurs' subversive moves, whether it be extorting commissions or joyriding, were only possible in a relatively short bracket of time. In the 1910s, they had not yet gained a genuine space[126] as a relevant social group in the domestication of the car, which meant that to exert power they had to use time-bound tactics (or the effect of surprise) on car owners' long-term strategies, i.e. that of keeping chauffeurs in the subservient position of coachmen. But in the absence of a proper to fall back on, chauffeurs' temporary agency was then curbed by the concerted strategies of owners and garage managers, who conversely could fall back on their **spatial and institutional legitimacy** to delimitate and monitor a space for chauffeurs. Thus, "in sum, strategies are actions which, thanks to the establishment of a place of power (the property of a proper) elaborate theoretical places (systems and totalising discourses), are capable of articulating an ensemble of physical places in which forces are distributed."[127] Ultimately then, after using time to take advantage of a space not yet institutionalised, chauffeurs were made to know their place.[128]

Whereas de Certeau's distinction proves enlightening when trying to map out the resources of agents who appear unequally endowed from the start, it perhaps does not put enough emphasis on consumers as agents of **co-production**. ***Ronald Kline***, in a later book,[129] building on the case-study of the rural adoption of the car which we discussed above, further explores the role of rural consumers. They are neither portrayed as compliant end-users, ready to absorb any new technology in the patterns of their everyday life, nor as cunning actors in an initially warped balance of power, having to resort to de Certeauian tactics: "Farm people were not passive consumers who accepted new technology on the terms of the reformers. Instead, **they resisted, modified, and selectively used these technologies to create new ways of rural life**. They followed their own paths to modernity."[130] The author then contends that the consumption of technology by rural users entails **a reciprocal form of social construction of technology**: consumers respond to mediators[131] of technology, they help to construct technology by using it, thus influencing producers. Thus **mediators, producers AND consumers are all seen as active agents of technological and social change**. Kline focuses on the adoption of four technologies: the telephone, the automobile, household appliances and the radio, before describing the organisation of the REA (Rural Electrification Administration) and co-operatives to electrify the farm, the struggle for local autonomy and developments in the post-WWII era.

[124] Cf. Ibid., p. xix.
[125] Ibid. p. xix.
[126] In a sense, one could postulate that they had been made to temporarily "usurp" (or fit in) the position of coachmen.
[127] Ibid., p. 38.
[128] Another good example of subversive use is the hot-rod culture, cf. e.g. Gartman, David, Auto Opium: a Social History of American Automobile Design, London 1994.
[129] Kline, Ronald R., *Consumers in the Country: Technology and Social Change in Rural America*, Baltimore 2000.
[130] Ibid., p. 276, emphasis mine.
[131] e.g. governmental agents, home economists, magazine columnists, etc.

The telephone[132] provides a good example of the co-producing of a technological system: "Farm families often cooperated to build and operate their own telephone systems, connecting up their neighbors in existing community patterns and recreating the rural institutions of musical gatherings and "visiting" on the party line. Farmers exercised a good deal of power in the social geography of access competition in rural telephony. AT&T acquiesced to the social practice of eavesdropping by designing a system that permitted it."[133] The introduction of the telephone in rural spaces meant that a new market, or a new space or proper, had to be created, before telephony found its institutional legitimacy in the countryside. The reluctance or mistrust of telephone companies as far as investing in the rural markets was concerned meant that farmers enjoyed relative freedom in the organisation of telephone cooperatives. It can then be argued that consumers in this context, did not have to employ particular tactics since the space was still there for the conquering, but rather, as Kevin Borg suggested about the car, rural users adopted a new artefact by fitting it into pre-existing schema and practices. Thus, as Kline also writes "farm men and women […] created their own versions of rural modernity […]." [134]

Co-production as envisioned by ***Solveig Wikström*** from a more economic perspective[135], is pitted against a traditional transaction between producer and consumer. Wikström defines co-production "as **buyer-seller social interaction and adaptability with a view to attaining further value**"[136] and sees it as an asset for both sides with benefits in terms not only of value but also increased opportunities to acquire more knowledge, reciprocal improvement of creativity, etc. Moreover, it should also encourage the crossing over of boundaries between, for example, design and production or marketing and consumption. The (self-)service economy should be seen as the context of her analysis.
The author then gives instances of what she considers to be co-production in various fields. Within **design**, Volvo conducts tests with potential consumers. Ikea takes clients suggestions into account which increasingly leads to standardized offers becoming more tailored to individual taste and needs. The example she offers for **production** are perhaps the least convincing: she quotes Ikea again with its policy of having customers assemble furniture,[137] and even includes online banking as a form of co-production. If the existence of co-production can be argued in the first case -although it is along rigidly prescriptive lines, leaving consumers very little freedom of interpretation- the second case is problematic. One can question what consumers actually produce when drawing money themselves: is the result achieved by self-service significantly different/distinctive from that obtained by a transaction over the counter? To our mind, if the definition of production is expanded to accommodate this example as a form of co-production, then, from the consumer's perspective, it is a particularly **disempowering** version. **The user's influence here is limited to the role of an end-user, who cannot alter any aspect of the process, the only option to prescribed use being non-use.**[138] In Wikström's interpretation, co-production on the **consumption** level is represented by after sales or customer services, which should provide dynamic interaction

[132] Cf. also Fischer, Claude, *America Calling: a social history of the telephone to 1940*, Berkeley 1992.
[133] Ibid., p. 276
[134] Ibid., p. 271
[135] Wikström, Solveig, "The customer as co-producer", *European Journal of Marketing*, 30, 4 (1996), pp. 6-19.
[136] Ibid., p. 10.
[137] It should be borne in mind that the self-service logic prevailing in IKEA transactions is very rationally based: the last step of assembling furniture is very expensive in terms of logistics (e.g. warehouse space) and very labour-intensive. A similar logic prevails in most supermarkets. But in both cases publicity aims at making consumers believe that it increases their agency: they are independent from potentially controlling retailing forces and can put a final "creative touch" on their purchase.
[138] It could of course be argued that according to Wikström's definition of co-production, which emphasises the creation of value, the drawing of money by customers outside of business hours does create value, in the sense that consumers' agency increases their purchasing power beyond the limits of institutional closing time.

between the two parts. For instance, she mentions Nestlé providing a 24-hour nutritional advice hotline. But there again if the consumer co-produces in this case, what is it exactly that s/he produces, apart from knowledge? The author ends her analysis of co-production by emphasising that stronger interactions in this field require matching organisational arrangements. Ikea and Volvo have, for instance, strengthened their "front-line workforce" but no provisions have been made to ensure information feedback channels from the front line.[139] Thus the economic perspective on co-production as value-enhancing, even if it does open the scope of production to domains which would usually not be considered in other fields, focuses on a symptomatically **superficial** level: **the consumer is mostly encouraged to provide the finishing touch upon a transaction, rather than being its crucial determinant**. From a corporate perspective especially, the legitimacy, hence the scope, of consumers' agency remains to be assessed before it can be effectively enrolled.[140] Even the enrolment of users into a structure such as a focus group, which could/should spell a more active role in the innovation process, is tributary of when consumers are enrolled. The stage in which they are included determines to a large extent the degree of their agency.

The extent of consumers' agency then, whether they be consumers of chairs, cars or telephones, seems to be primarily linked to the legitimacy of the cultural space they occupy. **Consumers' agency is often overlooked** and partially also much more difficult to trace since it very rapidly raises **the question of sources**. Unless consumers are formally enrolled within focus groups, panels, tests etc. organised by the marketing departments of companies and/or in various forms of consumer associations and pressure groups, it is particularly difficult to map out their concrete influence on product development and use, especially when dealing with non contemporary everyday life practices. Consumers' (auto)biographies, for example, provide very fragmentary, memory-bound reconstitutions of the past, which means that any assumptions made about actual use should be subjected to the utmost caution.

Finally, it appears crucial to focus on another type of agency, that of **designers**, which often has a particularly decisive impact on the process of consumption, because these actors frequently see themselves as **users' agents** on the production side, even up to the present day. Monika Mulder, for instance, a designer from Ikea, says about her work: "I'm interested in the way people use products and how good design can contribute to a better everyday life. […] A designer has to understand people's needs and production possibilities […] combining them is what leads to designs that have value for people".[141] Designers then operate in the tension between producers' profit imperatives and consumers' demand for individual design and agency.

In "Imagining Consumers"[142], ***Regina Blaszczyk***, contends that " […] supply did not create demand in home furnishings, but **demand determined supply**"[143] and bases her investigation on British and American company archives in the field of china and glassware production and retail, which highlights the salient role of intermediaries to mediate consumers' tastes. We do not wish to extensively dwell on the phenomenon of mediation here, since it is discussed in the previous section, but wish to highlight the perceived "on-behalf-of-users" agency of

[139] She feels that IT might provide the necessary infrastructure to enable this feedback.
[140] However it can be argued here again that, as our colleague Martina Hessler suggested, the (self-)service economy seems to contribute to a form of post-modern dissolving of the dichotomy between consumption and production. When a user consumes a service s/he automatically produces something on the material and/or symbolic level.
[141] Cf. IKEA design homepage: http://www.ikea.com/ikea_design/ikea_design.asp
[142] Blaszczyk, Regina Lee, *Imagining Consumers: Design and Innovation from Wedgwood to Corning*, Baltimore and London 2000.
[143] Ibid. p. 13, emphasis mine.

designers. As a reviewer states: "There is a paradox at the heart of the debate about design for the consumer. **Is the designer responding to what the consumer wants (designer as mirror) or is s/he rather seeking to lead the consumer into a brave new world (designer as visionary)?**"[144]

Blaszczyk traces the trajectories of a number of fashion intermediaries and designers in the field. In chapter 7, for example, she contrasts industrial designers in the late 40s working with the notion of a unified American taste with designers working in close collaboration with firms committed to small and flexible batch production, a hallmark of their success in the first three decades of the 20th century. Among the former, Freda Diamond remarked: "Working with the department stores as home furnishings coordinator and stylist gave me the opportunity of meeting and speaking to their customers […]. It helped me enormously in designing a product that could CREATE DEMAND. Also being involved as a consultant with the people in advertising and publicity both at the retail and wholesale levels gave me a chance to help SHAPE DEMAND."[145] Here then, **contact with consumers is primarily viewed as a tool to reinforce the agency of designers rather than represent that of consumers**. On the contrary, the latter, such as Vincent Broomhall, working for Homer Laughlin –a glass manufacturer - "[…] articulated a strategy that combined a respect for tried-and-true market-driven aesthetics with an imperative for technological innovation. In his worldview, the shopper, rather than the tastemaker, told the factory what to make." From this perspective then, **a hand on the consumers' pulses enables the designer to faithfully mirror and anticipate their tastes**. The author then comes to the conclusion that it is this last strategy which generally proved the most successful at least until the domestic (American) market was invaded by exports from Japan and Europe in the 50s and 60s.[146]

Another prominent strand in Blaszczyk's analysis of this particular type of consumption is manufacturers and retailers' growing awareness of the **agency of women consumers** in the purchase of goods and their increasing reliance on a very important type of **mediators**, with a strong gender bias, namely **home economists**. Two key-focuses which bring us to the second part of our discussion about agency.

5.3. Gender analysis makes power negotiations visible

In the struggle to decipher the extent and depth of consumers' agency, it often appears that using a gender perspective on consumption provides one with a much clearer mapping of how negotiation power is distributed between the actors in this process.

Regina Blaszczyk's analysis of the strategies of china and glassware companies to build increasing market niches, indicates that very early on, these became conscious of the

[144] Richard Kimbell, reviews the above in the *Journal of Consumer Culture*, Vol. 1, Nr 1, June 2001, pp. 141-43.
[145] Quoted in Blaszczyk, op. cit., p. 250, emphasis reproduced from the quote. It should however be emphasised here that Freda Diamond's assertion could/should? also be viewed in the context of a form of bravado that is frequently found in the narratives emanating from this type of profession.
[146] "Overall the manufacturing firms in this book recoiled from tastemakers- outspoken aesthetes and consultant industrial designers- who tailored themselves after Oscar Wilde or Walter Dorwin Teague. Self-sanctification little impressed batch producers; nor did middle brow beautification plans. Liberation from aesthetic bonds allowed these manufacturers to climb up and down the social ladders they sniffed out trade. Unrestrained by prescriptions for improving taste, their factories could fiddle with a hodgepodge of visual possibilities until they hit options likely to register among their target audiences. The give and take of the established design system, wherein fashion intermediaries approved or vetoed product proposals on behalf of consumers, perfectly suited the general way of doing things among batch producers, who saw adaptability as their forte." Ibid., p. 274.

importance of catering to the concrete wants of female customers, since, even if they did not always purchase the goods themselves, they where the crucial determinants of the acquisition. **Women thus shaped the design of household accessories through their empowerment as consumers (selection of goods) as mediated by various fashion intermediaries**.[147]

The agency of home economists, predominantly women, as in the case of designers, was felt to oscillate in a tension between the dedication to the mission of producers, i.e. selling as much as possible, and their sensitivity towards women's needs and aspirations. Blaszczyk portrays home economists in the story around the marketing of Pyrex[148] dishware. Prominent among them, was Lucy Maltby who "[…] devised ways that home economics, still dedicated to the woman's viewpoint, might contribute to corporate growth."[149] Further, she "[…]hired a team of field service, or travelling, home economists, whose jobs entailed creating "a feeling-of-need" for Pyrex lines."[150] Lilla Cortright, a collaborator in Maltby' team, seemed, on the contrary to have opted for a more consumer-oriented approach, using consumer test panels and acting upon their demands.

This example provides a good indication of the complex **layered quality of agency** when viewed through the gender lens. Women's agency as consumers seems in this case to heavily rely on the mediation or "on-behalf-of-users" agency of home economists. And the latter, depending on their company's philosophy and the current economic conjuncture, waver between empowering consumer choices and trying to steer them and sometimes even sacrificing their own agency to submit to the imperatives of product managers. The complexity of the author's very rich narrative means that it is sometimes difficult to systematically evaluate what ultimately made a decisive impact on consumption. If consumers' agency, as mediated by various intermediaries, such as the designers or home economists we have just mentioned, seems to have prevailed, it also partly prevailed due to the mindset of particular entrepreneurs, whether their delegating of agency was due to open-mindedness or ignorance about and puzzlement over female consumer behaviour. Additionally, the relative influences of aesthetic and functional cultural imperatives of the time as well as aggressively modernising top-down marketing also played a far from negligible role in the ultimate breakthrough of a number of household furnishings.

Danielle Chabaud-Rychter, in her contribution to *Bringing technology home: gender and technology in a changing Europe* [151] also focuses on the agency of designers as it pertains to user representations but from a more contemporary perspective. Her analysis is based on observations gained through monitoring the creation and transmission of user representations within the various departments of a firm which produces food processors. The background prompting of her investigation is that few women work in design, a fact which problematizes the nature of the **designer-user relationship**. Chabaud-Rychter envisions the relationship in terms of a **dialogue** (in the sense developed by Michel Callon: machines carry the word of inventors, developers, producers): **users can submit to the prescriptions inscribed in the artefact, but can also reinterpret, circumvent or transform them**. The agency of users is thus posited as **reactive** rather than proactive and the aim of the dialogue, from the producers point of view, is to **learn about users AND shape them through the design of products**. She identifies and describes three steps in the elaboration of user representations: a. those

[147] Cf. ibid., p. 275.
[148] A revolutionary sturdy heat and cold proof material, out of which dishes were manufactured which enabled the preparation, cooking and serving in the same container.
[149] Ibid., p. 261.
[150] Ibid., p. 261.
[151] Eds Cynthia Cockburn & Ruza Fürst Dilic, Buckingham, Philadelphia 1994.

constructed using "scientific" knowledge by marketing through formalized procedures, b. those projected by members of the innovation group when trying to personally identify with the user, and c. those elaborated through the casting of actual users as subjects of usability trials.[152]

Marketing bases its construction of the user on statistical studies about the sales of existing products. These findings are then compiled to identify potential target populations and needs when the company plans on diversifying its range.[153] The schematic theoretical outline provided by marketing then has to be incorporated into the **design** which means the knowledge encoded in user representations has to be transmitted to **development engineers**. It is only at this point that the relevance of concrete representations of women users enters the picture. These representations can be divided into three main orientations: the user as beneficiary (fulfilment of food fantasies, links to tradition), the user as operator (ergonomic dimensions) and the user as owner (status related needs). This stage, in keeping with the speech/dialogue metaphor, can be summed up as rhetorical procedures. Male design/development engineers build on comparisons with existing technology, many of the features to be incorporated in the new artefact result more from so-called common sense than the concretely ascertainable needs/wants of consumers (male engineers tend to draw on their own experience to establish what women want…cf. their conclusions from the studies presented in section 4.1.). Finally, female user representations filter into the actual **casting of users as subjects of usability trials**. During this phase prototypes are tested by the design department, with an emphasis on the experience of all the senses. But the link between designer and user is fragile. Even if male designers engage in concrete physical experimentation with a prototype, they can only identify thus far with female users. There again the rhetorical dimension of the dialogue might sound feminine-oriented –engineers refer to the prototype as their baby- but it obscures the fact that the intimate relationship woven between the artefact and the engineers often leaves little or no place to the concrete female user. Even during the final usability trials, technical hitches are solved using "feasible" measurements or the experience of colleagues. When it comes to concrete user interaction, it is not genuine outside users who are recruited for tests but in-house colleagues from other departments (which have supposedly not been in contact with the prototype) implying that they are supposed to "use it just like a housewife would."[154]

As interesting and challenging as the dialogue metaphor may prove to describe the user-designer relationship, the trouble with this particular analysis is that it focuses on a sadly **truncated or one-sided dialogue version**, which is more akin to an unconvincing monologue where the voices of genuine lay-users have no place. **The female user constructions elaborated within the various company departments fail to accurately represent the concrete female user because the male designers' faith in their ability to embody users' agency tends to occult the interference of soft facts of engineering.**[155] These soft facts are the cultural assumptions and tacit knowledge that designers more or less unconsciously bring into the design process (for example, the assumption that the user is predominantly feminine could be challenged). Soft facts can only be challenged if lay-users are proactively integrated in a co-producing process as we discussed above. It is only then that the full meaning of dialogue is enacted.

[152] a) and c) correspond to Akrich's explicit user representation techniques, and b) to the implicit ones in her concept. Cf. Section. 4.1., p. 25ff.

[153] Cf. Cf. Section 4.1. on marketing's crucial influence on future production plans. However, the literature analysed in that section mainly argues that marketing studies hardly have any influence on the actual design.

[154] Ibid. p. 89.

[155] And this male designer/ female user dichotomy is but a more acute version of the general divide between designers and users, regardless of gender.

Even more significant in this respect, is the research conducted by ***Anne Jorunn-Berg*** in the same volume, on the designing of Smart Houses. Berg interviewed designers and producers of the innovative home of the future, she combed through publicity and visited three test houses in the U.S. Her questions covered the type of technologies currently developed, what kind of housework these technologies were meant to accomplish and whether housework was really taken into consideration in the design, as well as the identity of targeted consumers. The first interrogation revealed that designers were intent on smooth or seamless integration of technological features in the house, especially focusing on the reduction of energy consumption and safety. The second point however disclosed that no designing endeavours had been devoted to the actual performance of labour-intensive housework. The last question revealed that **the relevance of users in the design process was considered "an interesting idea**,"[156] and that designers only had a vague inkling about potential consumers.[157] "In summary, then, the men (and it is men) producing prototypes of the intelligent house of the future and designing its key technologies have failed to visualize in any detail the user/consumer of their innovation."[158] This study then is a powerful demonstration of the power of designers, who, in some cases, do not seem to even bother to represent or stage users' potential agency. In the case of smart houses though, it might explain why, until now, the concept of automated living has not yet really convinced consumers: if any domain is emblematic of users' entitlement to individual agency, it is certainly that of the living environment.

"His and Hers", the collection of essays edited by ***Horowitz*** and ***Mohun***,[159] enlarges on these considerations of design, with a variety of contributions ranging from the gendered consumption of luxury hotels, candy, energy, radio receivers, glassware, stoves as well as the consumption of or in evolving spaces (from town centre to shopping centre). The introduction very self-consciously puts forward that "[…] the authors emphasize the **agency of particular groups, including consumers, workers, manufacturers, and the "mediators" who communicated between producers and consumers**."[160]

Stephen Lubar in the first general chapter entitled "Men/Women/Production/Consumption", emphasises the need to redefine technology paying attention to gender: on the one hand cultural ideas about masculinity and the industrial revolution shaped each other before affecting the definition of technology itself. The author quotes Joy Parr who asserts that an integration of the gender dimension in the definition of technology means that the skill and knowledge of users of technology, emblematic of the consumption of technology, have to be considered in a more comprehensive **definition** of the term. He then emphasises Judy McGaw's suggestion to "[…] cease taking the 'separate spheres' [i.e. history of production and history of consumption] as 'logical' units of analysis. We need not accept home and work, women's activities and men's labor, as separate simply because Americans chose historically to separate them spatially and rhetorically."[161]

---

[156] Ibid. p. 175.

[157] Honeywell, one of the main investor company in the project, went so far as to assimilate the future owner with the man of the house…
Also, cf. Haddon's discussion of smart houses (in section 4.1.) which reaches similar conclusions, e.g. it was industrial buildings (and not potential users' suggestions) which were taken as inspiration for heating and cooling systems.

[158] Ibid., p. 176.

[159] *His and Hers: Gender, Consumption, and Technology*, Eds Roger Horowitz & Arwen Mohun, Charlottesville and London 1998.

[160] Ibid., p. 1.

[161] Both Parr and McGaw quoted in ibid., pp. 19-20.

This contextualisation proves crucial in terms of agency, since **highlighting the agency of women in the two spheres contributes to saliently display the artificiality of the divide between production and consumption,** as in ***Gail Cooper***'s essay on the American Candy Industry, in the same volume. She first deconstructs the common example of mass production as emblematised by the automobile, by showing that this narrative of mass production is a very male-dominated and often very conservative sphere. She then suggests that the mass production of candy shows an entirely different picture, where women's agency dominates both the spheres of production and consumption and where mass consumption mirrors mass production more convincingly:

"Confectionery was called a "woman industry" because a majority of its workers and, increasingly, a number of its consumers were female. These workers and consumers viewed themselves as connected not only by economic exchanges but by **sisterhood** as well. Disenfranchised until after World War I, women saw in consumer power a potent tool for social change. Exploiting the importance of packaged brand-name products to the new consumer-producer nexus, the National Consumers' League rallied women buyers to employ the threat of **boycott** to effect industrial reform for female factory workers."[162]

This excerpt highlights an important form of consumer agency which has not yet been mentioned in this review, namely **consumer leagues**. Here, while concretely embodying consumer power at its acutest, using **political or discriminating consumption** as a tool to counter the agency of company owners (the socially and hierarchically visible producers), they substantially contributed to the betterment of working conditions for the concrete, anonymous group of candy producers, mainly women. If this particular type of agency was and is obviously not the sole province of women, gender is crucial here, since consumer leagues provided one of the very few forms of political leverage available to women. The author then argues that during the 1920s this form of gendered consumer power based on a form of sisterhood gradually evolved into a **rationalised "self-interest" version**.[163] Leading the way were "experts such as government bureaucrats, home economists, and advertising executives [who] each promoted their own brand of rational consumption. Without an explicit political ideology holding workers and consumer together, by 1928 consumers tended to behave as the creatures that advertising executives urged them to be—**discriminating rather than political**."[164]

Nevertheless, Cooper's narrative remains a convincing example of the **dual agency consumer power** provides, both in the act of **(selectively) purchasing and (selectively) not purchasing**: "Women who bought candy with their own money confounded the ideal of the dependent female, and those who wielded consumer power for industrial reform repudiated it altogether. Manufacturers intended brand-name products to protect their economic interests, but power flowed two ways in the new producer-consumer network."[165] Moreover, despite the observed shift in the motives governing the action of consumer leagues, it nevertheless remains that these actors' agency is a force to be taken into account when observing the balance of power within the consumption junction.

[162] Ibid., p. 69.
[163] From 1920, one could argue that women's right to vote also provided them with other means of exerting power and perhaps perversely so, gradually undermined previous expressions of feminine solidarity.
[164] Ibid., p. 88.
[165] Ibid., pp. 88-89.

An enlargement on the agency of female consumer associations is provided by another stimulating contribution in this outstanding collection: ***Joy Parr***'s analysis of the circumstances constraining the purchase of a stove for Canadian women (Ontario) between 1950 and 1955. After emphasising the particular retailing constellation around the stove – characterised by an overwhelmingly male sales force who, influenced by manufacturers' goals, were more intent on pushing the latest technological gadget than on selling an effective cooking aid- the author examines women's various resistance strategies. Women mainly had to rely on informal networks to shop around for information before venturing into stores. On the design front, their needs and preferences were also systematically brushed aside: housewives were construed as potentially grateful to choose from what was on offer without having their say. The ruling male imperative of the time was a smooth conversion of military into civilian industry and considerations of form overrode any attempt at functional efficiency, leading up to a particularly aberrant post-war brand of **non-user-oriented functionalism**. Designers developed a very condescending attitude towards users, especially women, arguing towards "**educat[ing] people to understand what they should want… in other words, to give them what they need rather than what they want**."[166]

Fortunately, women did not cower when facing such a patronizing attitude but sought to organise resistance and change by joining forces in the Canadian Association of Consumers (CAC): "Under the leadership of women with close links to the governing federal Liberal Party, the association pursued two goals, to **represent the interest of women consumers through briefs to government and industry and to urge Canadian women to be discriminating shoppers, making the market system work for them by refusing to buy goods that did not meet their needs**."[167] But this institution wanted to go even further by pushing for the creation of a consumer research bureau entrusted with several tasks, the most important of which would have been to help consumers to crystallize their admittedly often inarticulate needs and desires, due to lack of engineering knowledge. The bureau would have conducted basic research into housewife activities, tested equipment in relation to these activities and formulated authoritative specifications "**express[ing] the needs and wishes of the consumer before things are manufactured.**"[168] Mainly due to lack of funding, the plan did not get through and women had to resort to their usual housewife resources such as unpaid labour and informal networking, which meant that the conflict between the CAC and designers continued to crystallize.

But the CAC continued to voice its requirements clearly (e.g. no yearly model changes, a more competitive oven scene including smaller manufacturers, stoves placed at waist level in the kitchen etc.) and managed to lobby for the production of a high oven with one Ontario firm. Ultimately though, the high oven did not break through for many reasons: mainly financial but also, surprisingly, taste-bound (the design somehow did not convince potential consumers who, by then, were used to a strictly normalised and "professional-style" laboratory kitchen). The author ends the article by alluding to the changed mission of the CAC: it gradually abandoned its attempts to push specifications for household equipment manufacturers and concentrated on producing **buyers' guides**. This move mirrored the

[166] Parr, Joy, "Shopping for a good stove: A Parable about Gender, Design and the Market", in ibid. p. 174. Cf. also her book: Domestic Goods: the Material, the Moral and the Economic in the Postwar Years, Toronto, Buffalo, London 1999, pp. 199-217.

[167] Ibid., p. 175. However, just as with home economists movements, perceiving CAC-style organisations' agency as representing mainly user/housewife interests is problematic. Especially during the first half of the 20th century, these institutions -just as designers for that matter- frequently took a rather technocratic stance on the introduction of new technologies and were, more often than not, intent on pushing their own view of efficiency.

[168] Ibid., p. 175

gradual demise of intermediaries during the hectic post-war boom, which left women to fight their way in understaffed suburban discounters.

Consumers' associations, in both the narratives of Gail Cooper and Joy Parr, have thus provided a very **versatile agency tool** in the hands of women, highlighting dimensions of power wherever they intervened: in the conditions of workers, the retailing scene, in putting pressure on producers and governments, in the advising of designers, etc. The relative breadth and effectiveness of this type of agency can be traced back to its collective vision and organisation, which in a sense, as opposed to the limited agency of the single consumer, can be seen, we think, as a form of **representative or meta-agency**. This meta-agency potentially provides enough leverage to challenge the deeper societal structures both generated and/or constrained by the phenomenon of consumption. But in both cases, a shift has been emphasised between a very **pro-active role** in attempting to shape consumption in the pre-market phase to a more **reactive role**, influencing consumption by choices made within the existing market palette.

Another landmark very convincingly portrays the intertwining of various actors' agencies as they impact the development of a particular artefact: the microwave oven. ***Cynthia Cockburn*** and ***Susan Ormrod***'s "Gender and Technology in the Making" consistently takes up the challenge sketched by Steven Lubar in "His and Hers" because it focuses on the continuum of actors, both male and female, shaping the microwave oven from its production to its consumption, thus convincingly **bridging the previous divide between both sexes and spheres**. The authors' gaze follows the microwave oven from the design department of a large Japanese producer in Britain to the kitchens of users interviewed on their microwaving practices. The authors' inputs are particularly stimulating in terms of the agencies of intermediaries such as home economists and retailers, but their analysis retains its sharpness right into the domestic intimacy of the oven. Along the way, they highlight each actor's **stake/s and preconceptions** about other actors in the creation, mediation and appropriation of microwaves: "Ideas and artefacts are social constructs, the outcome of negotiation between *social actors*, both individuals and groups. To explain a technological development we need to identify the people involved, observe what they do, what they say, how they relate. **A successful innovation, like microwave cooking, depends on the creation and maintenance of an alliance of actors**."[169]

To dissect the interlocking strata of this alliance, the book draws on varied sources: written material[170] such as dissemination figures, flow and organisation charts, statistics on employment or dissemination, etc., retailing documents (promotional, internal sales pitch instructions), etc. but also a wealth of interviews carried out with most of the actors mentioned. The ordering of this data with a gendered focus becomes both **a means** to expose contradictions, conflicts and negotiation processes between heterogeneous agencies and **an end** to emphasise a reciprocal phenomenon, i.e. how gender construction influences the making of technology, but how, in turn, technology contributes to the gendering of (and crystallisation of gender within) particular social constellations. This stance enables the authors to transcend the division between production, consumption and reproduction as well as to find out "***who* designs, *who* sells and *who* uses**"[171], by focusing on cultural patterns**:** "Once we think about gender we are obliged to think about people and groups in terms of how

[169] Cockburn, Cynthia & Ormrod, Susan, *Gender and Technology in the Making*, London, Thousand Oaks & New Delhi 1993, p. 9.
[170] Unfortunately , these sources are rarely explicitly accounted for in the body of text, references are piecemeal or inexistent, which from a methodological point of view is a serious shortcoming.
[171] Cf. ibid., pp. 12-13, emphasis mine.

they see themselves and each other. And it will become clear that **gender subjectivity and identity have an important bearing on technologies and technological activities**. People as feminine and masculine are also constituted in relations, some of which are technological relations."[172]

It is these two themes of identity and subjectivity which are the leitmotivs organising the **division of labour and competences** in the spheres that are successively examined by the authors: within the factory in general, and focusing on the divide between engineers and home economists in particular, in the retailing world, in the home and finally in the construction of representations in advertising. In fact, the division of labour and competences sketched in the first sphere neatly ricochets through all of the spheres, with very few modifications along the way.

In the retailing sphere the issue of agency is particularly focal as the act of retailing overtly engages with question of control, hence power: '**There is an unclear dividing line between accurately *representing* the customer, *constructing* the customer and *controlling* the customer**. The retailer of microwave ovens needs to construct a popular image of the shopper with some basis in fact in order to be able to predict appropriate sales techniques and promotional materials. At the same time the retailer needs to control the customer – both to clinch a sale and to lead the user into sage and responsible microwaving practices so as to avoid safety scandals that reflect badly on microwave manufacturers and retailers alike. In representation, construction and control of the user, concepts of technology and gender, and the relationship between the two, are developed and deployed."[173] In retail, gender as a power definer operates in two ways: particular representations of gendered competences ensure a certain division of labour which mainly follows the patterns of saleswomen being entrusted with the promotion of white goods and salesmen being responsible for pushing brown goods. Symmetrically, similar gendered representations of the competences of potential customers underlie differentiated approaches to the art of selling. In both spheres, societal evolution is slowly transforming the archetypes polarizing this division, especially in the second sphere where the insensitive application of potentially outmoded stereotypical approaches might endanger a successful sale (e.g. a young, single and technically competent woman will react negatively if the salesman is too patronizing).[174] But Cockburn and Ormrod, in a move similar to Steven Lubar -whom we quoted above, finally subordinate the evolution of identity and subjectivity in technology to the evolution of the **definition of technology itself and the cultural context it contributes to create**:

"[…] technology is split in two. There is a relatively clearly defined sphere, Technology-with-a-capital-T, that has developed as masculine. And there is a diffuse residual sphere of doing and making whose activities are variously gendered (amateur fishing as masculine, for instance, typing as feminine). The most characteristic *domestic* doings are feminine. In the home, utensils, tools and machines are used but not as a rule made. Most (like the microwave oven) are *engineered* in the sphere of Technology and sold as commodities. Technology-with-a-capital-T however involves both making *and* using equipment, tools and machines."[175]

[172] Ibid., p. 40, emphasis mine.
[173] Ibid., pp. 109-110, emphasis mine.
[174] Cf. also chapter 5 in ibid. where Cockburn and Ormrod dissect the very slow evolution of gendered domestic patterns by analysing and comparing a sample of hetero- and homosexual households with varied cultural and financial backgrounds and come to the conclusion that, more often than not, the microwave provides "more work for mother". (They provide the sadly telling example of a woman, who, with the advent of a microwave in her home, felt compelled to tailor individual meals for all the members of the household, which they could then warm up later, instead of preparing one meal for all).
[175] Ibid., p. 171.

Thus beyond the intrinsic identities and subjectivities of actors, what ultimately controls the deployment of agency are representations of these identities and subjectivities and the encoding/crystallisation of these representations in a dominant technological definition.

Ruth Oldenziel in her article "Man the Maker; Woman the Consumer: the Consumption Junction Revisited" plunges head on into the problem of definition.[176] She contends that WWI proved a major turning point in the way technology was defined: from that point onwards, hardware became the exclusive site of serious technology, machines were enthroned as the true fetishes of modernity and the new capitalist order generally began to privilege capital-intensive over labour-intensive technologies. This world view gradually contributed to define women's activities as a non-technical area that could nevertheless be shaped and controlled by technological discourse focused on efficiency, machine aesthetics, labour saving, etc., all realms pertaining to a productionist vision of work organisation. This vision was gradually contested by women activists, who for example denounced the injustice of women not being able to hold patent rights.

Reminding the reader about the social construction of technology -i.e. that users are active participants in shaping technologies and produce frames of meaning just as inventors do- the author goes on to quote examples of inventions (e.g. records, telephones, bicycles, radios, etc) which were originally thought out for men but were then also (sometimes massively) consumed by women, thus subverting the original frames. Before WWI, women's agency expressed itself through several channels. For example, in the context of the United States, women as consumers played a significant role in the political economy by organising into the National Consumer League, other women working as municipal housekeepers were also able to push feminine interests to the fore, providing a powerful framework to define a distinct women's culture of technology. A strong divide developed between the public and private technical cultures: progressive women reformers operated outside the military-industrial complex and patriarchal family firms whilst women engineers relied on these bureaucracies and the backing provided by a professionalisation of technological activities. After WWI, with the influx of women in corporate and government offices the two spheres were no longer as clearly defined and what the agency of women gained by sheer number and improved mediation and framing, it lost through a weakening gender identity and cohesion, a point which was also made by Gail Cooper whom we quoted above.

Oldenziel then emphasises the balancing act of most women in these spheres, who as mediators were torn between gendered identification and corporate allegiance.[177] She also shows how electric and gas utilities exploited this mind-split by increasingly recruiting women so as to reach out to housewives, a move which progressively lead to the construction of a new market. This type of strategy then fostered the emergence of "a coalition between manufacturers and women's clubs, home economics professionals, and activists [which] emerged in the 1920s in America and beyond, profoundly shaping the new technologies and the gender roles to go with them."[178] This coalition persisted almost unchallenged until the early 1960s feminist movement started analysing the entrapment of the middle-class housewife into the roles of mother, wife and consumer, all roles entailing a very limited public agency. The author, whilst not contesting the urgency and validity of this feminist

[176] Cf.: Oldenziel, Ruth, "Man the Maker, Woman the Consumer: The Consumption Junction Revisited", in: Angela N.H. Creager, Elizabeth Lunbeck and Londa Schiebinger (eds.), Feminism in the Twentieth-Century Science, Technology, and Medicine. Chicago 200, pp. 128-148.
[177] Cf. earlier our discussion of the roles of designers and home economists.
[178] Ibid., p. 142.

perspective and struggle within the context of the time, shows that women's agency, if often wayward and constrained, was never absent from the technological scene all through the progressive era. "As initiators, designers, lobbyists, and consumer activists [women] became coproducers of some important technical systems of the twentieth century: city infrastructures, electrical systems, and product engineering."[179] Oldenziel thus concludes that the dichotomy of her title "Man the Maker; Woman the Consumer" hints towards a misleading perspective on the economic and socio-technological organisation of the 20th century because " […] producers and consumers were not separate actors; they shaped and constituted each other."[180]

Historical perspectives on the German scene seem to reveal comparable developments, but the cultural specificities of the German context -be it between the two wars, and especially during the national socialist era, or during the 1950s in the former GDR- outline differentiated constellations of power especially linked to the development of particular institutions and specific definitions of and discourse on technology. ***Martina Hessler***'s book, "Mrs Modern Woman", which we also mentioned in Section 3.3., focuses on the introduction of mass-produced household technologies, promoted under the banner of "modernity", into German homes during the interwar period, as the consequence of the electrification push. The author uses the original concept of "implantation" to analyse the introduction of a new technology.[181]

Among a great number of stimulating perspectives, the author raises the multifarious construction of female consumers, from the conservative to the technically challenged through the emotional user, as well as the ambivalent status of housework, and how these constructions and status translated into the marketing of electrical household appliances. She shows how this particular construction of users led to the creation of a new profession, that of the female 'electrical adviser' who was thought to be in a better position to mediate the new technologies. Their involvement in both the spheres of "masculine technology" and the "feminine household" meant that their role challenged the traditional divide and provided a bridge in this particular consumption junction. In chapter 6, "Women as Masters of Technology"[182], Hessler goes on to emphasise the agency of another very significant actor: various housewives associations, from women engineers (mostly active in the household realm), to social-democrat women's associations, denominational women's unions, women citizens' movements, etc. She then sketches the agency of a particular umbrella association, the Reichsverband Deutscher Hausfrauenvereine (hereafter RDH), founded in 1915. Showing how this association positioned itself in regard to the American scene -by deploring American housewives' loveless and characterless management of the home whilst ambivalently describing the American household as the epitome of a "woman's paradise"- she analyses how the RDH developed its technological mission against the backdrop of the 1920s economic crisis and the theme of the overworked housewife. The association mainly targeted middle-class housewives and envisioned housework as a profession in its own right. Within this framework, technology in and rationalisation of households were seen as a means to justify and support this professionalisation claim. Correlated to this claim, a new female identity was shaped, that of the technically competent modern woman.

Concretely the RDH argued for the right to voice an opinion in the development of new technologies, thus confirming the importance of the household in Germany's political

[179] Ibid., p. 137.
[180] Ibid., p. 143.
[181] Cf. Hessler, Martina, op. cit., p. 22-23. Cf. also the concept of „agents of diffusion" as developed by Rose, Mark, Cities of Light and Heat, University Park, PA, 1995.
[182] „Frauen als Meister der Technik", pp. 195-262.

economy by politicising the private sphere, well before the advent of the national-socialist regime. In 1925, the RDH even created an institute, the "Versuchstelle" in Leipzig, which carried out practical and scientific research on household technologies and which was really conceived as a mediating body between producers and female consumers. Its aims were to promote the agency of women in three ways: 1. by demanding new appliances 2. by providing consumer advice[183] 3. by offering a consultancy service. The women working in the Leipzig institute explicitly wanted to influence the development of appliances as female users and homemakers, but it appears that they very consciously and self-evidently left the technical details to men, thus encouraging this particular form of sexual segregation. Finally, the RDH's vision was that women could "domesticate" technology in the "taming" sense of the word, thus preventing defective developments engendered (literally!) by a male-biased technological hegemony. During the national-socialist era, these ideas gathered even more impetus since the RDH expected and, to some extent, got substantial support from the government. In 1934, the association was taken over by the national-socialist women's movement ("Frauenschaft") and in 1935, home economics was officially recognised as a profession. Technology was then seen as a means to relieve both housewives and their maids. Later, in 1936, and due to changing political imperatives, it was envisioned as a resource to assist mainly harried working women.

Hessler's German case-study thus provides us with a very convincing if unsettling example of the potency of a representative agency, especially when it is endorsed by existing political structures,[184] a factor which was missing in Joy Parr's Canadian context. Additionally, she shows how this particular type of agency cannot be dissociated from the representations constructed for/by the actors it is supposed to represent. These constructions in turn vary according to the social, political and economical climate of a particular society, determining the degree of impact of any given agency.

Focusing on a later period, namely the late 1950s, and on a changed political climate, that of the GDR, Karin Zachmann also outlines the role of a prominent organisation: the "Zentrale Aktiv für Haushaltstechnik" on the household technology front.[185] It was founded in 1956 by the Ministry for General Mechanical Engineering as a strategy to counter consumers dissatisfaction with a mediocre offer of household appliances and to deal with the problem of accumulated stocks of unsaleable products. The background for the creation of the "Aktiv" was a joint conference organised by the Ministry with the "Demokratischer Frauenbund Deutschlands" (DFD), the East-German women's organisation, during which it was expected that producers present their appliances, women react to them and the ministry design the optimal use of limited resources.[186] Discrepancies with the original agenda of the conference were clearly visible when a working woman demanded appliances for the individual household, a petition that appeared quite obviously drawn from the longing for a western lifestyle. By then, western standards seemed to have also influenced the engineers and representatives of the official economic position who had had the opportunity to sample the offer of the Cologne domestic appliance fair. This state of affairs thus triggered the need for a

[183] e.g. in the form of an RDH-approved label stamped on products which had been tested both practically by housewives and scientifically by men with a mechanical background, thus providing a definite shift in favour of female consumer power.

[184] The fact that these structures were those of the national-socialist regime makes the issue very problematic, especially in terms of legitimacy.

[185] Zachmann, Karin, op. cit., 2002.

[186] The GDR's second five-year plan which predicted increased personal consumption, the emulation provided by the western economic miracle and also the decrease of women's involvement in paid labour (a fact which was ascribed to their double load of paid and unpaid labour) were the main reasons which had spurred on the organisation of the conference.

new forum, the Aktiv, where the optimal production and consumption of appliances could be negotiated. Housework was thus targeted for increased rationalisation and the masculine perspective proved there again predominant. Women working outside the home, as opposed to housewives, were to be the privileged target group of household technology development, additionally women were to be enrolled as both consumers and producers in technological development, finally the main aim of the association was to centralise and ultimately eliminate housework.

Unfortunately, the aim of most participants in the "Aktiv" was to avoid economic losses, which translated into users being concretely disempowered from the start. Contradictions also soon appeared in the mission of the organisation: the imperative of promoting "the" best appliance was set against the fact that many producers had already developed a wide range of products and that the women's association demanded that appliances be tailored to the size of various households. Moreover, the "Aktiv" demanded that designers and producers work together so as to obtain the most consensual and long-lasting models instead of distinctive and ephemeral fashion accessories. The organisation's concern with these material constraints and manufacturing problems meant that production challenges gradually superseded the question of design quality, an evolution which ultimately entailed the disintegration of the "Aktiv",[187] the mission of which had remained obscure for a majority of women.

This example could then provide an interesting comparison with the circumstances during the national-socialist era as described by Hessler, where the efficiency of the represented agency should be seen in relation to the doubtful legitimacy of the political regime endorsing it.

This panorama of gendered agency: from designers, to home economists, retailers, consumer associations, women's organisations and governmental experiments, etc. shows that agency is a highly complex phenomenon which cannot be apprehended without a sensitivity to the intermingled ways in which agency operates, to how actors represent themselves and others, how they manage to establish a more or less constructive dialogue, how they manage to evolve more or less coherent, socially acceptable and politically sanctioned definitions of the technologies at stake, and more generally to fluctuating social, economic, political, and cultural –in short the existing historical- circumstances presiding over the complex matrix of consumption. Thus if the abstract theoretical concepts presented in the first part of the review have lost some of their abstractness, they have conversely also become more difficult to apply unequivocally when confronted with concrete historical actors and structures.

Bibliography

Akrich, Madeleine: User Representations: Practices, Methods and Sociology. In: A. Rip, Th. J. Misa & J. Schot (Eds*): Managing Technology in Society. The approach of Constructive Technology Assessment*. London 1995, pp. 167-184.

Akrich, Madeleine: Beyond social construction of technology: The shaping of people and things in the innovation process (1992). In: Dierkes, Meinolf & Hoffmann, Ute (Eds.): *New Technology at the Outset. Social Forces in the Shaping of Technological Innovations*. Frankfurt 1992, pp. 173-190.

[187] in 1958. Later on that year another centralised decision brought about the creation of a commission for consumer goods, which was no longer strictly focused on the houshold.

Akrich, Madeleine: The De-Scription of Technical Objects. In: Bjiker, Wiebe & Law, John (Eds*): Shaping Technology, Building Society. Studies in Sociotechnical Change*. Cambridge (M.A.), 1992, pp. 205-244.

Andersen, Arne: *Der Traum vom guten Leben: Alltags- und Konsumgeschichte vom Wirschaftswunder bis heute*, Frankfurt a/Main, New York, 1997.

Barthes, Roland: *Die Sprache der Mode*. Frankfurt am Main, 1985.

Baudrillard, Jean: *Pour une critique de l'économie politique du signe*. Paris 1972.

Beck, Stefan: *Umgang mit Technik. Kulturelle Praxen und kulturwissenschaftliche Forschungskonzepte*. Berlin 1997.

Bijker, Wiebe E., Hughes, Thomas P. & Pinch, Trevor J. (Eds): *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Cambridge (M.A.) London 1989.

Blaszczyk, Regina Lee: *Imagining Consumers: Design and Innovation from Wedgwood to Corning*, Baltimore, London 2000.

Borg, Kevin: „The „Chauffeur Problem" in the early Auto Era: Structuration Theory and the Users of Technology", *Technology and Culture*, 40 (40): pp. 797-832.

Bourdieu, Pierre: *Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft*. Frankfurt 1998

Brändli, Sibylle: *Der Supermarkt im Kopf. Konsumkultur und Wohlstand in der Schweiz nach 1945*. Wien 2000.

Carlson, Berhard W.: Artifacts and Frames of Meaning: Thomas A. Edison, His Managers, and the cultural construction of Motion Pictures. In: Wiebe, E Bijker & John Law (Eds): *Shaping Technology, Building Society. Studies in Sociotechnical Change*. Cambridge (M.A.), London 1992, pp. 175-198.

Carter, Erica, *How German is She?: Postwar West German Reconstruction and the Consuming Woman*. Ann Arbor 1997.

Cawson, Alan; Haddon, Leslie & Miles, Ian*: The Shape of Things to Consume. Delivering Information Technology into the home*. Aldershot, Brookfield, Hong Kong, Singapore, Sydney 1995.

Clarke, Alison J.: *Tupperware. The Promise of Plastic in 1950s America*. Washington, London 1999.

Certeau, Michel de, *The Practice of Everyday Life*, Berkeley, Los Angeles, London: University of California Press, 1984.

Cockburn, Cynthia & Ruza Fürst Dilic (Eds): *Bringing technology home: gender and technology in a changing Europe*. Buckingham, Philadelphia 1994.

Cockbum, Cynthia & Ormrod, Susan, *Gender and Technology in the Making*, London. Thousand Oaks & New Delhi 1993.

Coombs, Rod, Green, Ken, Richards, Albert & Walsh, Vivien (Eds): *Technology and the Market. Demand, Users and Innovation. Cheltenham.* Northampton 2001.

Cooper, Gail: *Air-conditioning America. Engineers and the Controlled Environment, 1900-1960*. Baltimore, London 1998.

Cowan, Ruth Schwartz: The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology. In: Bijker, Wiebe E., Hughes, Thomas P & Pinch, Trevor (Eds): *The Social Construction of Technological Systems. New Directions in the Sociology and History of Technology*. Cambridge (M.A.), London 1987, pp. 261-280.

Crossick, Geoffrey & Jaumain, Serge (Eds): *Cathedrals of Consumption: The European Department Store, 1850-1939*. Aldershot, Brookfield, Singapore, Sydney, 1999.

Douglas, Mary; Isherwood, Baron: *The World of Goods. Towards an Anthropology of Consumption*. London 1996.

Dussel, Konrad: „Wundermittel Werbegeschichte? Werbung als Gegenstand der Geschichtswissenschaft". In: *Neue Politische Literatur*, 42 (1997), pp. 416 – 430.

Featherstone, Mike, *Consumer culture and postmodernism*. London 1998.

Feenberg, Andrew, *Questioning Technology*. London 1999.

Fischer, Claude, *America Calling: a social history of the telephone to 1940*. Berkeley 1992.

Garnert, Jan: „Über die Kulturgeschichte der Beleuchtung und des Dunkels". In: *Historische Anthropologie* 5, 1997, pp. 62-82.

Gartman, David, *Auto Opium: a Social History of American Automobile Design*. London 1994.

Gay, Paul du, Hall, Stuart, Janes, Linda, Mackay, Hugh & Negus Keith: *Doing Cultural Studies. The Story of the Sony Walkman*. London 1997.

Goldstein, Carolyn M.: Part of the Package: Home Economists in the Consumer Products Industry , 1920-40. In: Stage, Sarah & Vincenti, Virginia B. (Eds): *Rethinking home economics: Women and the history of a profession*. Ithaca, London 1999, pp. 271-296.

Gray, Ann: *Video Playtime. The gendering of a leisure technology*. London, New York 1992.

Grazia, Victoria de & Furlough, Ellen (Eds): *The Sex of Things. Gender and Consumption in Historical Perspective*. Berkeley, 1996.

Gries, Rainer (Ed.): *„Ins Gehirn der Masse kriechen!": Werbung und Mentalitätsgeschichte*. Darmstadt 1995

Gronow, Jukka & Warde, Alan (Eds): *Ordinary Consumption*. London, New York 2001.

Hansen, Ursula & Bode, Matthias: *Marketing & Konsum. Theorie und Praxis von der Industrialisierung bis ins 21. Jahrhundert*. München 1999.

Haard, Mikael & Jamison, Andrew (Eds): *The Intellectual Appropriation of Technology. Discourses on Modernity*, 1900-1939. Cambridge (M.A.), London 1998.

Hengartner, Thomas & Rolshoven, Johanna (Eds): *Technik - Kultur. Formen der Veralltäglichung von Technik - Technisches als Alltag*. Zürich 1998.

Hessler, Martina: *"Mrs. Modern Woman". Zur Sozial- und Kulturgeschichte der Haushaltstechnisierung*. Frankfurt, New York 2001.

Horowitz, Roger & Arwen Mohun (Eds): *His and Hers: Gender, Consumption, and Technology*. Charlottesville, London 1998.

Hughes, Thomas: From deterministic dynamos to seamless web systems. In: Sladovich, Hedy E. (ed.) *Engineering as a social enterprise*. Washington 1991, pp. 7-25.

Journal of Design History, vol. 10, Nr 2, 1997 (Special issue: „Design, Stalin and the Thaw").

Karmasin, Helene: *Die geheime Botschaft unserer Speisen: Was Essen über uns aussagt*. München 1999.

Karmasin, Helene: *Produkte als Botschaften. Was macht Produkte einzigartig und unverwechselbar? Die Dynamik der Bedürfnisse und die Wünsche der Konsumenten. Die Umsetzung in Produkt- und Werbekonzeptionen*. Wien 1993.

Kaminsky, Annette, *Wohlstand, Schönheit, Glück. Kleine Konsumgeschichte der DDR*. München 2001

Keim, Gerhard: *Magic Moments. Ethnographische Gänge in die Konsumwelt*. Frankfurt, New York 1999.

Kline, Ronald: Agents of Modernity: Home Economists and Rural Electrification, 1925-1950. In: Stage, Sarah & Vincenti, Virginia B. (Eds): *Rethinking home economics: Women and the history of a profession*. Ithaca, London 1999, pp. 237-252.

Kline, Ronald R., *Consumers in the Country: Technology and Social Change in Rural America*, Baltimore 2000.

Kline, Ronald & Pinch, Trevor, „Users as Agents of Technological Change : The Social Construction of the Automobile in the Rural United States", *Technology and Culture*, 37 (1996): 763-95.

König, Wolfgang: *Geschichte der Konsumgesellschaft*. Stuttgart 2000

Kopytoff, Igor: "The cultural biography of things: commoditization as process", in: Appadurai, Arjun (ed.): *The social life of things. Commodities in cultural perspective*. Cambridge, London, NY, New Rochelle, Melbourne, Sydney 1986, pp. 64-91.

Kotro, Tania & Pantzar, Mika: "Product development and changing cultural landscapes - Is our future in "snowboarding""? In: *Design Issue* (forthcoming, 2002).

Kline, Ronald & Pinch, Trevor, „Users as Agents of Technological Change : The Social Construction of the Automobile in the Rural United States", *Technology and Culture*, 37 (1996): 763-95.

Krieg, Beate: *„Landfrau, so geht's leichter!" Modernisierung durch hauswirtschaftliche Gemeinschaftsanlagen mit Elektrogroßgeräten im deutschen Südwesten 1930-1970*. München 1996.

Kriegeskorte, Michael: *100 Jahre Werbung im Wandel: eine Reise durch die deutsche Vergangenheit*. Köln 1995.

Kunkel, Paul: *Digital Dreams: the Work of the Sony Design Center*. Kempen 1999.

Laird, Pamela Walker: *Advertising Progress. American Business and the Rise of Consumer Marketing*. Baltimore 1998.

Lamberty, Christiane: *Reklame in Deutschland 1890-1914. Wahrnehmung, Professionalisierung und Kritik der Wirtschaftswerbung*. Berlin 2000.

Latour, Bruno: *Der Berliner Schlüssel : Erkundungen eines Liebhabers der Wissenschaften*. Berlin 1996.

Lie, Merete & Soerensen, Knut H. (Eds): *Making Technology Our Own? Domesticating Technology into Everyday Life*. Oslo, Stockholm, Copenhagen, Oxford, Boston 1996.

Löfgren, Orvar: "Consuming Interests". In: *Culture & History*, 7 (1990), pp. 7-36.

Lubar, Steven & Kingery, David W. (Eds): *History from things. Essays on Material Culture*. Washington and London 1993.

Lunt, Peter K. & Sonia M. Livingstone: *Mass consumption and personal identity : everyday economic experience*. Buckingham, 1992.

Mackay, Hughie; Gillespie, Gareth: "Extending the Social Shaping of Technology Approach: Ideology and Appropriation". In: Social Studies of Science, (22) 1992, pp. 685-716.

Marchand, Roland: *Advertising the American Dream: Making Way for Modernity, 1920-1940*. Berkeley, L.A. 1985.

Merkel, Ina: *Utopie und Bedürfnis. Die Geschichte der Konsumkultur in der DDR*. Köln, Weimar, Berlin 1999.

Merkel, Ina: Consumer Culture in the GDR, or How the Struggle for Antimodernity Was Lost on the Battleground of Consumer Culture. In: Strasser, Susan, McGovern, Charles & Judt, Matthias (Eds.): *Getting and*

Spending. European and American Consumer Societies in the Twentieth Century. Cambridge 1998, pp. 281-299.

Miller, Daniel (ed.): *Acknowledging Consumption. A Review of New Studies*. London, New York 1995.

Miller, Daniel (ed.): *Material cultures. Why some things matter*. Chicago 1998.

Mitcham, Carl, *Thinking through technology. The Path between Engineering and Philosophy*. Chicago 1994.

Nicolas, Blandine, « A l'appel du tam tam… ». In : Garabuan-Moussaoui, Isabelle & Desjeux, Dominique (Eds), *Objet Banal, Objet Social : Les objets quotidiens comme révélateurs des relations sociales* Paris 2000.

Oldenziel, Ruth, "Man the Maker, Woman the Consumer: The Consumption Junction Revisited", in: Angela N.H. Creager, Elizabeth Lunbeck and Londa Schiebinger (Eds.), *Feminism in the Twentieth-Century Science, Technology, and Medicine*. Chicago 200, pp. 128-148.

Pantzar, Mika: "Domestication of Everyday Life Technology: Dynamic Views on the Social Histories of Artifacts". In: *Design Issues*, 13 (1997), pp. 52-65.

Pantzar, Mika: "Consumption as Work, Play, and Art: Representation of the Consumer in Future Scenarios". In: *Design Issues*, Vol. 16, N 3, (2000), pp. 3-18.

Pantzar, Mika: "Inventing and articulating the need for domestic appliances - an exploratory study into the discursive reality of post-war Finland". Paper presented at the workshop "Mediating technologies: users and usage in the history of 20th century technology", Munich 14-16/12/2001 (forthcoming).

Parr, Joy: *Domestic Goods: the Material, the Moral and the Economic in the Postwar Years*. Toronto, Buffalo, London 1999.

Pfaffenberger, Bryan: „Technological Dramas". In: Science, *Technology and Human Values*, 17 (1992), pp 282-312.

Pfister, Christian, *Das 1950er Syndrom. Der Weg in die Konsumgesellschaft*. Bern, Stuttgart, Wien 1995

Prinz, Michael: "Konsum und Konsumgesellschaft seit dem 18. Jahrhundert. Neuere deutsche, englische und amerikanische Literatur". In: *Archiv für Sozialgeschichte* 41 (2001), pp. 450-514

Reinhardt, Dirk: *Von der Reklame zum Marketing. Geschichte der Wirtschaftswerbung in Deutschland*. Berlin 1993.

Reith, Reinhold: „Reparieren: Ein Thema der Technikgeschichte?" In: Reith, Reinhold and Schmidt, Dorothea (Eds.): Kleine Betriebe – angepaßte Technologie? Hoffnungen, Erfahrungen und Ernüchterungen aus sozial- und technikhistorischer Sicht. Münster 2002, pp. 139–161.

Retallack, Bruce G.: "Razors, Shaving and Gender Constructions: An Inquiry into the Material Culture of Shaving". In: *Material History Review*, 49 (Spring 1999), pp. 4-19.

Riggins, Stephen Harold (ed.): *The Socialness of Things. Essays on the Socio-Semiotics of Objects*. Berlin, New York 1994.

Roberts, Mary Louise: "Gender, Consumption, and Commodity Culture". In: *American Historical Review*, 103 (1998), pp. 817-844

Rose, Mark H.: Getting the Idea Out. Agents of Diffusion and Popularization of Electric Service in the American city, 1900-1990. In: Plitzner, Klaus (ed.): *Elektrizität in der Geistesgeschichte*. Bassum 1998, pp. 227-234.

Rose, Mark, *Cities of Light and Heat*, University Park (P.A.), 1995.

Ruppert, Wolfgang (ed.): *Fahrrad, Auto, Fernsehschrank. Zur Kulturgeschichte der Alltagsdinge*. Frankfurt am Main 1993.

Ruppert, Wolfgang (ed.): *Chiffren des Alltags. Erkundungen zur Geschichte der industriellen Massenkultur.* Marburg 1993.

Ruppert, Wolfgang (ed.): *Um 1968. Die Repräsentation der Dinge*. Marburg 1998.

Schiffer, Michael Brian: *The Portable Radio in American Life*. Tucson, London 1991.

Schiffer, Michael Brian (Ed.): *Anthropological Perspectives on Technology*. Albuqerque 2001.

Schildt, Axel & Sywottek, Arnold (Eds): *Modernisierung im Wiederaufbau. Die westdeutsche Gesellschaft der 50er Jahre*. Bonn 1993.

Schildt, Axel: *Moderne Zeiten. Freizeit, Massenmedien und „Zeitgeist" in der Bundesrepublik der 50er Jahre*. Hamburg 1995.

Schulze, Gerhard: *Die Erlebnisgesellschaft*, Frankfurt, New York 1992.

Selle, Gert: *Geschichte des Design in Deutschland. Frankfurt am Main*, New York 1994 (4th revised edition).

Shove, Elisabeth; Southerton, Dale: "Defrosting the freezer: From novelty to convenience. A narrative of Normalization". In: *Journal of Material Culture*, 2000, pp. 301-319.

Sievert, Marsha: "Aesthetics, Technology, and the Capitalization of culture: How the Talking Machine Became a Musical Instrument". In: *Science in Context*, 8 (1995), pp. 417-449.

Silberzahn-Jandt, Gudrun: *Wasch-Maschine: Zum Wandel von Frauenarbeit im Haushalt*. Marburg 1991.

Silverstone, Roger & Hirsch, Eric (Eds): *Consuming Technologies. Media and information in domestic spaces*. London and New York 1992.

Skitovsky, Tibor*: The Joyless Economy. The Psychology of Human Satisfaction*. Oxford 1992 (revised edition).

Siegrist, Hannes, Kaelble, Hartmut & Kocka, Jürgen (Eds): *Europäische Konsumgeschichte. Zur Gesellschafts- und Kulturgeschichte des Konsums (18. bis 20. Jahrhunderts)*. Frankfurt am Main, New York 1997.

Spiekermann, Uwe: *Basis der Konsumgesellschaft. Entstehung und Entwicklung des modernen Kleinhandels in Deutschland 1850-1914*. München 1999.

Stigler, G. & Becker, G.: „De gustibus non est disputandum". In : *American Economic Review*, 67/2 (1977), pp. 76-90.

Strasser, Susan, McGovern, Charles & Judt, Matthias (Eds.): *Getting and Spending. European and American Consumer Societies in the Twentieth Century*. Cambridge 1998.

Tauritz, Laura, "Sitting pretty: Social construction of the ergonomic chair", Autumn 2001, SHOT paper.

Wengenroth, Ulrich: „Technischer Fortschritt, Deindustrialisierung und Konsum. Eine Herausforderung für die Technikgeschichte". In: *Technikgeschichte,* 64 (1997), pp. 1-18.

Wengenroth, Ulrich: Small-Scale Business in Germany: The Flexible Element of Economic Growth. In: Odaka, Konosuke & Sawai, Minoru (Eds): *Small Firms, Large Concerns. The Development of Small Business in Comparative Perspective*. Oxford 1999, pp. 117-139.

Wikström, Solveig, "The customer as co-producer", *European Journal of Marketing*, 30, 4 (1996), pp. 6-19.

Wildt, Michael: *Am Beginn der „Konsumgesellschaft". Mangelerfahrung, Lebenshaltung, Wohlstandshoffnung in Westdeutschland in den fünfziger Jahren*. Hamburg 1994.

Wildt, Michael: Changes in Consumption as Social Practice in West Germany during the 1950s. In: Strasser, Susan, McGovern, Charles & Judt, Matthias (Eds.): *Getting and Spending. European and American consumer societies in the 20th century*. Washington 1998, pp. 301-316.

Wit, Onno de, la Bruhèze, Adri A. de & Berendsen, Marja: „Ausgehandelter Konsum: Die Verbreitung der modernen Küche, des Kofferradios und des Snack Food in den Niederlanden“. In: *Technikgeschichte* (68), 2001, pp. 133-155.

Woolgar, Steve: Configuring the User: the case of usability trials. In: Law, John (ed.): *A Sociology of Monsters: Essays on Power, Technology and Domination*. London, New York 1991, pp. 57-99.

Zachmann, Karin: “A Socialist Consumption Junction. Debating the Mechanization of Housework in East Germany, 1956-1957”. In: *Technology and Culture*, Vol. 43, Nr 1 (January 2002), pp. 73-99.