Teenage consumption of information and communication technology

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Abstract

A Danish database with data from 50 000 households, their energy consumption combined with building characteristics and the socio-economic data on their inhabitants documents that one teenager in a household entails a 20% higher electricity consumption than that of an average adult. These data will be presented as an introduction to the paper. There are however also other reasons for being interested in the consumer behaviour of teenagers. On the one hand teenagers are the adult consumers of tomorrow and some of their energy consuming behaviour may follow them throughout their life. On the other hand teenagers as consumers are known from other studies to be a special consumer group in that they are very much aware of and sensitive to the opinions and behaviour of their peer-groups. Departing from these reflections, a qualitative interview investigation with a focus on families with teenagers was carried out. In-depth interviews with nine parents and their teenagers focused on how teenagers use and purchase information and communication technology (ICT) such as televisions, mobile phones, computers etc. The paper reports on the qualitative findings on the dynamics of consumption among teenagers' ICT use. The analyses draw on recent consumer theory and discuss in the conclusion how such findings can give new directions for energy policies.

Rationale for focusing on teenage consumption of ICT

There are good reasons for being interested in households energy consumption as around one third of all energy in Denmark is consumed directly in the households (Energistyrelsen 2003). Furthermore it is relevant to describe what influences and determines the level of a household's energy consumption, as research documents that there are huge variations in the level of energy consumption between different kinds of households (Gram-Hanssen 2004, Gram-Hanssen 2002). Denmark has quite reliable registers of both persons and buildings, and researchers are allowed to combine these registers with consumption data supplied by utilities. In this way a database has been established with data from approximately 50 000 households from the second largest city in Denmark, Aarhus. For each household it contains socio-economic and demographic data from the Danish personal data net (the Danish CPR register containing information on income, education, age, nationality etc. on every person living in Denmark), building data from the national building data net (the Danish BBR register containing information on the year the building was constructed, size and type etc. of all buildings in Denmark), combined with water, electricity and district heating supplied to the household[1].

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1. The database and its results concerning electricity consumption are further described in (Gram-Hanssen, Kofod and Petersen 2004). The full detailed statistical analysis is described in a Danish report (Petersen and Gram-Hanssen 2005).

Results from multiple regression analyses for electricity consumption in apartments and detached houses are summarized in Tables 1 and 2, where the 'explaining' variables are presented in descending order. In the tables each new line represents an additional explanation, where the effect of the above variables is accounted for. This means, for example, that the tables show the effect of a larger floor area when the effects from the number of persons and the income of the household have already been taken into account.

Results show that by using all available data approximately one third of the variations on electricity and water consumption and half of the variations on heat consumption can be explained. At the same time this means that quite a lot of the variations between households cannot be described quantitatively, but has to be understood in terms of qualitative descriptions. For water and electricity consumption the number of persons living in the household is the single most significant variable, whereas for heating the floor area is most significant (only electricity is shown here).

Concerning the age of the inhabitants, we see in Table 1 and 2 that the presence of teenagers is not a very important factor for explaining the overall variation in electricity consumption neither in detached houses (change in R^2=0,5%) nor in apartments. A main reason for this low explanatory power may be that only 19% of the detached houses and 4% of the apartments have teenage occupants. However if there are teenagers in a household, the effect on electricity consumption is quite visible. As seen in Table 1, each person in a detached house on average entails 541 kWh of electricity, and if this person is a teenager it entails an extra 179 kWh. Also in apartments teenagers have a significant effect, even though it is not as big as in detached houses. Here each person uses 291 kWh and if the person is a teenager, it entails an extra 117 kWh (Gram-Hanssen, Kofod and Petersen 2004).

The question of what teenager practices are actually causing the extra consumption of electricity, can be answered based on findings from another study. In Denmark, as well as in three other European countries, one hundred households were measured during one month. For all appliances and all lamps consumption was measured every ten minutes (Sidler, Lebot and Pagliano 2002). In a follow-up project on the Danish data, the electricity measurements were combined with a socio-economic questionnaire and qualitative interviews and from this we learnt how different end-uses vary with different background variables (Gram-Hanssen, Kofod and Petersen 2004). If we here look explicitly at the families with teenagers, we see that the two end-uses that are higher than in other types of families are electricity used for clothes washing and drying and for computers (Kofod 2005).

Put together these data indicate that there are quantitative arguments for focusing research on teenagers' electricity consumption. Furthermore the teenagers as consumers might be interesting also because they will be the adult consumers of the future. A relevant question therefore could be if the habits of the teenagers are particular to this specific age group and will change as they grow older, or if they belong to this cohort and will follow them in their adult live too.

In the last decade we have seen quite a few energy studies on everyday life practices. Many of these show in different ways that most decisions and use patterns in peoples' mind are totally unrelated to energy use, and that households energy consumption to a large extent is driven by mechanisms, not normally thought of in energy policy (Aune, 1997, Gram-Hanssen 2004, Kuehn 1998, Shove 2003, Wilhite et al. 1996). The study presented here follow the line of these

Table 1. Detached Houses: Background Variables Effect on Electricity Use.

Background Variables	Effect on Electricity Use	Explanatory Power
	kWh/year	Change in R^2 (%)
Constant	628	
Per person in the household	541	27.6
Per 100 000 DKK in gross income	90	5.8
Per 10 sq. Metre floor area	95	2.5
Per age square* of oldest person	-0.35	1.3
Per 0-6 years old children	-158	
Per 13-19 years old children	179	0.5

Based on analysis of the Aarhus database, n=8.573
* In the multiple regression analysis the actual age, and not only the age square is used, in order to follow
"the hierarchical principle", the actual age however has no explanatory power.

Table 2. Apartments: Background Variables Effect on Electricity Use.

Background Variable	Effect on Electricity Use	Explanatory Power
	kWh/year	Change in R^2 (%)
Constant	116	
Per person in the household	291	21.9
Per 100 000 DKK in gross income	20	1.3
Per 10 sq. Metre floor area	119	7.2
Per age square of oldest person	-0.1	1.3
Per. 0-6 years old children	-76	
Per 13-19 years old children	117	0.3

Based on analysis of the Aarhus database, n=40,281

studies, asking however the specific questions of how everyday life practices among teenagers influence energy consumption.

Methodology

The analysis in this study is based on data from nine qualitative interviews with teenagers and one of their parents. Six of the interviews were with boys and three with girls, all aged between 13 and 15 years. In most of the interviews the mother participated, but in one family it was the father most of the time, and the mother joined the interview only partly, and in another family it was the father as he, after a divorce, was living alone with his son. In all of the interviews the families decided themselves, which parent should take part in it. The contact procedure and selection of the families were the following: three schools in three different types of neighbourhoods were asked to give the pupils in this age group a questionnaire with questions on socio-economic variables and of energy and water consumption. The parents were asked to fill in and return the questionnaire to us and they were asked to indicate if they allowed us to contact them. The three schools were selected to provide informants with different socio-economic backgrounds – one school was located in a district with large houses and wealthy inhabitants, the second in an area with middle-class detached houses and the third in an area with both detached houses and apartment blocks with more low-income people. This procedure however yielded no returned questionnaires from the school in the wealthiest district (maybe because the school never distributed them), and no returned questionnaires from families living in apartments. The returned questionnaires from the middle-class detached houses however represented quite some variation in socio-economic status and in energy consumption, so based on these seven families were selected in order to get the widest possible variation in socio-economic background. Furthermore two families living in apartments were contacted through colleges.

The interviews lasted one to two hours. They were semi-structured interviews with an open interview guide, were tape-recorded and transcribed. All interviews were in Danish and quotes appearing in this text have therefore all been translated. The interviews dealt with questions of the use and size of the house, on information and communication technologies (ICT), on showering habits and clothes washing and on attitudes towards consumption and environment. This paper only deals with the themes related to the use of ICT, whereas another paper concentrates on cleanliness and clothes washing (Gram-Hanssen 2005).

The strength of qualitative interviews is that you get in-depth information on meanings from individuals, who can formulate in their own language what they think about the subject in question. The interviews can be interpreted on several levels, including the level the person talks on, the *way* the interviewee talk about the subject, and include more theoretical understandings (Kvale 1996). The weakness of qualitative interviews is the limited number of persons that can be interviewed if you want to analyse in depth. This also means that the teenagers interviewed in this study in no way represented all teenagers in Denmark. And even though they were selected to have a rather big variety in socio-economic terms and level of energy consumption, this did not mean that they represent different social classes or types of consumers. The variation of the selection was only to ensure that we get as many different views as possible on the subject in the interviews.

Norms and variations on ownership and use of ICT

There are several aspects of interest when we want to learn more about why homes with teenagers consume more electricity than other homes, including the number and types of ICT in the homes and the way they are used. In this section I will first describe norms and variations on use and ownership of technologies. For different types of ICT the interviews stated what the teenagers own; how, when and why they got it and how often and in what ways it was used. Based on this, the following paragraphs discusses more theoretical questions of social pressure for more technology. Finally standby behaviour, as an examples of a saving attitude, will be explored as a question of risk perception or routines.

TELEVISION SETS

All the interviewed teenagers had their own television set in their room. Most had had their own television set, since they were 6 or 7 years, whereas a few had had their own for one or two years. In some of the families, typically those where the children had had their own television sets from very early on, it was considered almost obligatory from both the children's and the parents' view that children had their own television set, because adults and children want to watch different programmes. In other homes it sounded more accidental whether children or teenagers owned a television set, the reason for instance being that a set was left over from the family when they got a bigger television set for the living room. Somewhere in-between accidentally and obligatory, some of the youngsters explained that they had received some money as a present for their confirmation which they wanted to use, so they decided to buy a television. In general it seemed very normal for teenagers to have television in their own room, however, it did not sound like something that there was strong feelings associated with, like something you just had to have. As some of the parents stated, television sets are quite cheap and there are often old televisions to inherit, so there is no real problem for teenagers to have their own, if they want.

Concerning the use of television sets, two of the parents expressed a concern that there could be too much television watching. In one family the mother thought about whether, and how, she should put restrictions on her son's and daughter's television watching. In another family the parents did restrict it by removing the cable card, so that the television set in their young daughter's room could only show Danish and Swedish national television, which she found quite boring. In the other seven families the amount of hours spent watching television was not an issue. There seemed to be quite a great deal of variation in how many hours the teenagers spent watching television, from very rarely and primarily together with the family in the living room to having

their own telly turned on all the time that they spent in their room. The teenagers may also change habits over time, like for instance the girl whose parents removed the cable card. She related how she used to watch many hours every day, and now she could go for days without watching. But also other teenagers related that they had changed behaviour from watching more to watching less (or vice versa) without interference from the parents. What the teenagers found interesting and how they wanted to spend their spare time did not seem to be very stable over time. Having a television set in their own room however did not necessarily mean that the teenagers preferred to watch television there rather than in the living room. Some of the teenagers declared that they thought it was cosier to sit in the living room, the television set there was bigger and the furniture was more comfortable. In some of the families they told how there might be arguments about what to watch where, even though all interviewed families had at least three television sets and some had four or five. One problem, at least in three of the families, might be that only one of the television sets at a time could use cablevision or the satellite dish.

VIDEO, DVD AND CONSOLES

Television sets however are not only used for watching television but also as a screen to show videos and DVDs or to use as consoles (PlayStations etc). Around half of the interviewed had video, DVD or a PlayStation (which also worked as a DVD) in their own room and actually some of the television sets in the teenagers' rooms were not even connected to an aerial so they could only be used as a screen for other electronics. According to the interviewed teenagers, it was primarily the boys who played on consoles, but some girls also played sometimes, and generally it was something that was more popular some years ago for this age group, but still some of them played quite a lot. One of the interviewed girls had a PlayStation; however she did not use it anymore. Two of the boys on the other hand stated that they never wished to have any type of console, because they did not think that it was fun to play or because they preferred to play on a computer. Again we heard that there was quite some variation in how often the youngsters used the consoles and also some related that there were periods when they used it a lot and others when they didn't use it at all. Typically it was used a lot when it was new and later the interest would fade. Concerning the consoles, a few of the parents stated that the consoles were very expensive when they were first introduced and therefore they hadn't wanted to give it to their children. This was however typically in the families that had had computers for many years, so these parents thought that their children could play on the computers instead of buying consoles. This also meant that it was not necessarily the families with the lowest income who were the most concerned with the prices of the consoles. Sometimes brothers and sisters might own the consoles together, for instance moving it from one room to the other every week or just agreeing that one had it in his room and that the other could use it there. The children who had video, DVD or consoles had bought the electronics themselves or they had received them as presents from parents or grandparents. At least one of the parents expressed the view that it was very difficult to think of ideas for Christmas and birthday presents and here

the electronics were one of the few possibilities for this age group. This might be a reason in itself that the electronics were bought.

COMPUTERS

In all the interviewed families they had at least one computer, and eight of the nine families had Internet as well. Half of the teenagers had their own computer in their room and three of them had Internet in the room as well. There were however different strategies and preferences among both parents and children regarding the best place for the computer. Some families had personal computers and other families had shared computers even though they might own as many computers as there were family members. Some families placed the computers in centrally located common rooms like the living room or the dining-area in the kitchen, whereas others placed them in rooms where the one using the computer could work undisturbed much like in an office. Others again place them in rooms that were not used for anything else, like a corridor on the first floor between the bedrooms.

Compared with other ICT equipment computers are rather expensive and they become outdated within some five years. In many of the families this also meant that having enough computers was not really a problem, as many parents could buy or get old computers cheaply from their workplaces, but having the newest computer may be important especially for the boys playing new computer games. This could be a reason for not having personal computers in the family, as it was difficult to decide who should have the newest, and because it was important to have the newest for some purposes and for other purposes it did not matter. A mother for instance told how they did not want to buy computers for both their children at the same time, because then you would have two computers that became outdated at the same time. So the new computer, they were going to buy, would be placed in the boy's room, because he uses it most, but only if he allowed his younger sister and the rest of the family to use it if they wanted. In other families, however, the children had received new personal computers, for instance as presents for their confirmation, or for Christmas.

All families had owned computers for several years, but there were huge variations in how the families use computers. In two of the families the fathers worked with computers as a profession. They had access to buy cheap computers and they were very attentive that their families had ample and up-to-date access to computers, and both of them had one of their computers running as servers for the family's network including hosting homepages for local sports-clubs. At the opposite end of the spectrum, a father who was alone with his son and who didn't know anything about computers and didn't use one himself had just bought a new computer for his son, because "nowadays you need to have a computer". This family was the only one without Internet, the reason probably being both lack of money, knowledge and interest from the father. The rest of the families were in between these two poles, in the sense that all family members used computers as a daily tool for emails, banking, information and entertainment, but didn't have any further particular interest in it.

All the teenagers used computers for schoolwork, some of them many hours a week, others less frequently. For instance one of the girls with a new computer had moved to a school where they did not allow or encourage its use. On the other hand the boy and father living alone felt that it was necessary for a boy at his age to have a computer at home which was new enough to use the same programs as the ones they had at school. Apart from schoolwork some of the boys primarily used it for computer games, at least one of the boys played several hours every day, whereas others played less. The eight of the teenagers, who had access to Internet, furthermore used the computer for information on sports, music and other of their interests and especially the girls also used it for chatting and visiting homepages where you could make your own profile. The teenagers said that they used the Internet from about 30 to 60 minutes a day. All children and parents agreed that you need to have a computer for schoolwork etc. and all the families they knew of had a computer at home. It was however not generally considered a "must" for teenagers to have their own computer, neither among children nor among the parents. If you used it a lot, it was nice to have your own and to have it in your own room, but less would do.

MOBILE PHONES

According to the way the interviewed teenagers talked about mobile phones, this was the ICT that was the most loaded with symbols within the group of teenagers. Having your own television was nice, and having access to a computer at home was compulsory, but unless you were hooked on computer games it did not necessarily have to be the newest or your own. Regarding mobile phones, at least among the group interviewed here, it was most important to have a mobile phone and to have the right type. All the interviewed teenagers had mobile phones and had had it for several years; however at least one of the boys complained heavily about the phone he had. It was too old and couldn't do anything but phone and send SMS, so he found it downright embarrassing to use it and never brought it along. To have a phone with many functions generally seemed to be very important, especially among the boys. The functions being camera, sending and receiving photos, sending and receiving mails and especially the camera function were mentioned by many of the teenagers, and many of them had it. However one thing was to have many functions, another was to use them. One of the boys, who had actually lost his new and very expensive phone recently, related that he had never used many of the functions that the phone had. He didn't know how to use for instance the email function, and sending photos was rather expensive, so he primarily used the camera just to take photos and show directly on the phone to his friends. The boy really wanted to have the same kind of phone again even though he didn't use many of the functions. His mother however would not let him have a new phone for the first 6-12 months, because she wanted him to learn to take better care of it, and not just loosing a phone worth Euro 400. Generally however the parents also wanted the teenagers to have mobile phones, so that they could keep in touch with their children.

SIMILARITIES AND DIFFERENCES OF USE AND OWNERSHIP BETWEEN THE ICT

In general what we heard from these interviews about ICT was that all the teenagers had quite a lot of different technologies, however not all of them used all the technologies with the same frequency. Some of them told how they had everything on whenever they were home, and that they could use a mobile phone, television and computer at the same time. Whereas a boy, for instance, told us that he didn't think it was very fun to watch the telly or play computer, and that he preferred to sit and talk with his friends or go out and play football. Generally the teenagers' ICT behaviour seemed to vary much more than their ICT possessions.

An important aspect of the possession of the ICT is economy, as some of it is very expensive and other is not. In general the ICT is much more expensive when it is new on the market and then the prizes fall after some years, and at the same time it becomes easy to inherit the older models for instance from family. This meant that those of the technologies that were not very quickly outdated, like for instance the television, was quite available to all who wanted it. Furthermore PlayStations and DVDs have gone down in price recently without becoming outdated. If you don't need the newest and biggest computer these are also easily available, but if you want the newest they are however very expensive. Mobile phones are the technology that has the fastest change in new models on the market. Even though the older models still works with the basic functions as phone and SMS, it seems very important among the young that they had one of the newest models, and even though they could be rather expensive, many of the teenagers had them.

This finding points to the next important aspect of the ICTs, which is the social prestige and status that the different technologies had among teenagers. Generally all technologies can give status, if they are very new and fancy. However for television sets, DVD and PlayStations it was not a very important aspect according to the teenagers themselves. Having big computers was important for those who played a lot, and there might be status in having your own big one, but the joy of playing on it seemed more important than the status of owning it. Mobile phones seemed to be the technology that was absolutely most loaded with status and symbols, and interpreting these interviews it sounded as if this could be even more important than its function.

The last aspect to conclude on here is the interest or dislike by parents concerning the teenagers' consumption of ICT. In general the parents seemed to be backing the teenagers' consumption of ICT, both with regard to the use and with regard to possessing their own technologies. Only if the teenagers used very many hours every day in front of a television or computer screen the parents seemed to feel any kind of dislike towards their children's ICT consumption. Some parents expressed that the price of the PlayStations some years ago was too high as it was only for playing, and they liked the computers better because they were both for entertainment and learning. Others found that the PlayStations were cheaper than computers and therefore a good choice if it was only about playing. All parents in these interviews however agreed that access to a computer at home was important and obligatory for teenagers. Furthermore all parents found it natural that their teenage children had mobile

phones, and they found it practical that they themselves could always get in contact with their children, wherever they were. However, some of the parents thought the prize of the newest phone models was to high, but if the children themselves paid they did not bother about it.

Understanding social pressure for more technology

In previous sections I have quoted from the interviews with the purpose of showing the actual practices and possessions of the teenagers. In the following sections I will give some theoretical interpretations that could help explain why the teenagers had these practises. Consumer theory within anthropology, sociology, economics and psychology as well as other disciplines deals with experiences, motivations and reasons for why people buy things and why different groups of consumers buy different things and some of the theories even include the use of the thing. Consumer theories thus seem adequate for the questions in focus here. Several authors have given their way of summarising the different approaches to consumption, many of them emphasising that the complexity of consumption has to be understood as an integrated framework of different theories - no single theory can explain it all (i.e. Gabriel & Lang 1995, Shove & Warde 2001, Røpke 1999, Featherstone 1991). Theories of consumption that are mentioned by all of these authors comprise consumption as a way of showing social class and status and as an integrated part of sustaining identity. In the following this will be developed and used in the interpretation of why teenagers consume ICT as they do. Other aspects that some of the authors include is the desire for the new (Campbell 1992) and the question of individualisation (Røpke 1999), and these aspects will also be discussed in the interpretation of the interviews. Other aspects like for instance the paradoxes of time-saving (Røpke 1999) or the "Diderot effect" (Shove and Warde 2001), which has no direct explanatory power in relation to these interviews, will however be left out, as the purpose here is to interpret teenagers' consumption of ICT and not generally to discuss different theoretical approaches to consumption.

LIFESTYLE GROUP, STATUS AND IDENTITY

Classical studies by Veblen, Simmel, Douglas and Bourdieu on consumption all focus on the communicative aspects of signals and symbols in relation to social groups, as they all in different ways see consumption as a means for some social groups to show and sustain their superiority over others (Bourdieu 1984, Douglas and Isherwood 1980, Campbel 1992). Bourdieu for instance describes consumption and 'the good taste' as a way for the higher social classes to distinguish themselves from the lower classes. The notion of 'habitus' is central to Bourdieu's theory (Bourdieu 1998). Habitus comprises the values, norms, attitudes, preferences and behaviour of the individual and it is a deep-rooted and unconscious structure, determined by the social and material conditions of childhood. Habitus is so to speak built into the body like a social DNA, and it enables people to act in everyday life without consciously considering every single move made. Bourdieu uses the notion of habitus to define

social classes as groups of individuals with the same habitus, and he distinguishes between three classes: the bourgeoisie, petit bourgeoisie, and the working class. Taste is to appreciate some goods or some forms of behaviour as opposed to others. Through taste, signals are sent about social belonging; however, it is the taste of the bourgeoisie that defines the taste of all three classes. The taste of the bourgeoisie is closely connected with appreciating what requires much money (economic capital) or a high cultural competence (cultural capital), which the other classes do not possess. In this way the higher social classes distinguish themselves from the lower classes. The taste of the petit bourgeoisie is defined by their trying to emulate the taste and norms of the bourgeoisie, whereas the taste of the working class is defined by the choice of necessity: what there is to choose when neither the economic nor the cultural capital is available in order to emulate the taste of the bourgeoisie.

Bourdieu can be criticised for being outdated in his class description (Gabriel & Lang 1995); however he argued that even though the exact social structures are changing, the principle of differentiation will remain (Bourdieu 1998). Not only Bourdieu, but also Veblen, Simmel and Douglas work with a hierarchical society where lower social classes try to emulate the taste of the higher classes and thus the leading classes constantly have to develop new tastes to continue distancing themselves from others. This one-way hierarchy however must be questioned in relation to taste, fashion and consumption styles, as it is often seen that counter-cultures have set the standard for fashion (Campbell 1992). This is seen for instance in the widespread hip-hop clothes and music, which is originally from the Afro-American underground. This and other examples thus questions the strong hierarchical class-based description of our society, but it does not question the whole idea of consumption as a way of showing group belonging and of how there might be some types of hierarchies between different lifestyle groups. In relation to children the principle may even be re-thought in the sense that distinction may relate more to for instance "maturity" or "childishness" than to lifestyle group in relation to the children's peer group (Martens et al. 2004). Concerning the interpretation of the teenagers' consumption of ICT, it may be relevant to focus on how the teenagers through their consumption show their social group belonging whether this is a social group in the sense of social class or not. It may however also be relevant to see if the parents use their children's consumption to show belonging to a group among other adults.

In contrast to the description based on a class-society, there is the late- or post-modern understanding. The argument is that a society is approaching where institutions from modern society, such as class, family and community are dissolving and where the individual therefore has to express and create his or her own individual identity (Beck 1992; Giddens 1990). That the individual is freed from these institutions does not mean that there is free choice and equal opportunities or that people behave more individually in the sense of differently from each other. On the contrary, one of the paradoxes of the individualised society is that it is based on mass culture and mass consumption as much as ever. What the individualised society means is that individuals hunt to find and express their own identity through con-

sumption choice of everything from clothes to education and partner. Zygmunt Bauman goes one step further and talks about the post-modern society, as characterised by consumption, in such a way that he defines those who do not fit in this society, the expelled, as defined by their inability to consume - the flawed consumers (Bauman 1997). For those who are able to consume the post-modern lifestyle have often been described as individual identity-formation, self-expression, creativity and art (Gabriel & Lang 1995, Featherstone 1991). As the consumption styles of young people have always been characterised by being less traditional, more open-minded and focused on hedonism and visibility, and as we here study new technologies that have been on the market only a few years, we may expect consumption to be more structured by post-modern than by modern consumer practices (Wilska 2003).

Turning to the teenager families, a first question could be if social classes and habitus seemed to influence the ICT consumption or if it was better interpreted in a post-modern light. One of the families, a father living alone with his son, told how his own childhood, when there was never enough of anything, influenced the way they now lived. He grew up in a rural area under poor conditions, for instance in his early childhood without running water in the house. This still influenced him so that he was very keen to save water and energy, and also to teach his son to be. As the father now was a 'blue collar' worker living alone they did have a rather tight economy. The father however recently bought a new computer and gave it to his son, not for a birthday or Christmas present, but just because the father thought it was needed for his son to do homework and other things. The father himself didn't know anything about computers and didn't use them. The son supplemented this by telling how in his class they often discussed what computer you had, and if your computer was old others might say: 'You just have a computer that cannot do anything'. It was something that you could be bullied with. This story could be interpreted in different ways. The father's 'saving-behaviour' for instance was a strong example of how habitus unconsciously carried over from habits from childhood to adulthood. He was actually proud of their low level of water and energy consumption and didn't think of this as being a flawed consumer. On the other hand, what was seen as 'necessary' to have today is very different from when the father was a child, and the father was very keen that they should have what was necessary. It was difficult to decide what pressure was the stronger for buying a new computer: the boy's homework or his classmates, but both pointed in the same direction – you are outside if you don't have it. In general these interviews suggested that having a computer was not a way of showing belonging to higher social classes, but not to have a computer was to be outside the normal consumer behaviour, in the eyes of both parents and children.

In the story told above, the boy related how you could be bullied if you had a very old computer, and he probably knew best, because he was one of the interviewed with the oldest computer. Most of the other interviewed teenagers however voiced expressions about computers which indicated that this technology was not as important a status object as the mobile phones. To illustrate the importance of the mobile phones, I will give examples from two of the interviews with a boy who had just bought a new phone and one who had a very old one respectively. The boy who had just bought a new mobile phone explained:

> 'I bought a new one, which can take pictures and a lot of other things, because I had seen others having that kind and I thought they were rather cool. (…) I waited a little and found one second-hand that was cheaper. (…) And of cause it was nice that someone came and said 'what a cool phone you have'. But the most important for me was that I liked it my self, because I wouldn't buy something I don't like myself, just to be popular.'

I asked this boy if he would be on the outside, if he didn't have a phone that could take pictures and he answered:

> 'Yes you can be. I haven't tried it myself, but you somehow can sense it. When you are in the schoolyard and everybody is bleeping with their phones. Then if someone doesn't have a phone they can be a little unpopular, because you can't say to them. 'Look at this picture".

The next example was of a boy who had a five-year-old mobile phone and who was at the moment discussing with his mother what type of new phone he should have. The mother wanted him to carry his phone with him, so that she could get in touch with him if she wanted to, and she had only recently realised why he never carried his phone with him. The mother explained that it was because he found it embarrassing, and the son continued explaining that today this phone was considered a drawback. He wanted a new one, one that could take pictures and had a lot of functions. However, it cost at least 650 Euro, which his mother thought was too much. The boy had just got a new computer for his confirmation, which he had really craved, and the new mobile was not as big a wish. The problem however was that if his mother wanted him to carry his phone with him, then it had to be a new one, because everything else was embarrassing. The boy didn't think he needed a phone that much, but if he had a new one then he would use it, to send picture etc.

As these examples show the possession of ICT was important for the positions teenagers had in their peer-group. This can be understood in two ways. First if a part of the teenagers' communication go through (camera) mobile phones and you don't have one, then you are physically unable to take part in that communication. Second and probably as important as the first case the teenagers directly expressed that it was cool to have a new mobile phone and embarrassing to have an old one, you were something according to your possessions.

NEW AS AN ARGUMENT

In the following I will continue from these statements concerning new and old, and try to explain how newness works according to social status and group identity and more generally what drives the desire for the new. In his work on newness Colin Campbell distinguishes between three different meanings of the word new (Campbell 1992). First in the meaning of a newly produced item of a well-known type of product, second in the meaning of an innovative and devel-

oped product with new functions, and the third meaning of new in the sense of a novel, or not previously known products. According to Campbell, different types of consumers would be leading according to these different kinds of newness. The innovative products will for instance typically be consumed by "technophiles" who are enthusiastic about new technology, and who typically do not show great interest in style or fashion. This group of consumers and their technical interest is however not the primary agent for the ever expanding amount of consumption as their technical interest do not spread easily to other consumers. The consumer group that according to Campbell is likely to make the most vital contribution to the dynamics of modern consumerism are the "bohemians" or artists who are interested in the new as the strange or even bizarre. This is the type of people who are the frontrunners of style and fashion, and they typically change their product preferences swiftly and continuously.

Campbell's work is intended to describe all kinds of products that can be consumed, but focusing explicitly on ICT like in this paper may pose difficulties with these divisions. First because new in the sense of newly produced ICT normally means that the product is innovative compared with what you may have bought only two or three years ago. Most ICT, and especially computers, are functionally outdated before they are actually worn out. Secondly the distinction between a developed product and a totally new type of product may be difficult to find. When mobile phones get built-in cameras and GPS, does it become a totally new type of product or is it to be considered an innovation of already known products? Furthermore Campbell's work primarily deals with adult consumers and the questions in focus here are about teenage consumers. Following this we may ask if the "technophiles" and the "bohemians" are descriptions that can be recognised among teenagers and if any of these or other types are more likely to drive the desire for the new among teenagers consuming ICT.

For at least one of the boys, the fascination with the possibilities in technology was a main motive for his ICT consumption. This was the same boy who had a very old mobile phone but had recently got a brand-new computer. He was very fond of computers and explained how he just enjoyed the functions and possibilities, and in this sense the understanding of 'technophiles' from Campbell may be quite adequate. His biggest problem with the old mobile phone however was that it was embarrassing to be seen with it, not only in company with a group of like-minded technophiles, but among teenagers generally. This points towards the idea of newness that may be different for different types of ICT, where computer newness primarily is for the 'technophile' whereas mobile phone newness is spread more to all groups, but maybe lead by a subgroup. The two boys in this interview material who were most keen to have a new camera telephone were for instance not very concerned about the size of their computers. With regard to computers two of the girls indicated that it was necessary to have a computer, but the size and age of it was not important just as long as it worked for their purposes (Internet and chat).

Not only the children, but also some of the parents would strive for newness. In two of the interviewed families, the fathers were very explicit that they wanted to have sufficient and sufficiently good computers for the whole family. There had been no wishes from the children for new computers in these families, as the fathers had taken care of sufficient supply since the children were rather small. Furthermore, especially one of the fathers had been very focused on teaching his children to use computers for information seeking etc. Both fathers worked professionally with computers and it did not sound like a hobby to them to install and run local networks etc. It sounded more as if they just wanted it to function, and to be an integrated part of the everyday life of the family. One way of interpreting this is that they understood themselves to be part of a group of frontrunners regarding ICT, and that it was an important part of their identity that their family as a whole was up to date regarding computers and internet.

INDIVIDUALISATION AND THE GROWING NUMBER OF TECHNOLOGIES

Individualisation has been described as one of the main characteristics of late-modernity and in a previous section it was developed how this means that the identity of a person becomes a project where the individual is responsible for constructing and sustaining his/her own identity. Consumption is a main input in this process and thus individualisation can be seen as an engine fuelling the expanding amount of consumption. This aspect of individualisation can however be developed in the explanation of the growing number of ICTs. Twenty years ago it was normal that a family had one television set and one telephone whereas now, as seen in the interviews, it is normal that there are as many telephones, television sets and computers as there are inhabitants in the household. Understanding this is about understanding how both parents and children think about being individuals living together, and being more or less dependent on each other in everyday life. Here it was interesting to see to what extent it was the parents or the children who acted strongest toward this independence as well as to understand this process of individualisation together with a strive for a sustained family life.

Regarding television sets some of the parents related that they gave their children their own television many years ago, because, as a father explained: 'we didn't like to watch all these cartoons and Disney and whatever, so then they could watch it by themselves'. A mother living alone with two children told that when they first moved in, the two daughters each had their own television, but there was not any in her room (which was also the living room). The daughters liked different types of television, and she herself was not very fond of watching television. Now however she had one in her room too. The tendency from these interviews was that it was those in the lower socio-economic groups that were most positive about small children having their own televisions, but none of the interviewed parents had anything against their teenagers having their own television. Not all of the teenagers however thought it was important to have their own televisions, and some of them enjoyed sitting in the living room together with the family more. Again the primary problem was whether the family members wanted to watch different programmes, because then it was nice to have your own or just to have enough television sets.

This corresponds to some of the teenagers liking to stay in their own room whereas others hardly used it. In one family the parents were very keen to make a new bigger and better room for their son in the basement. He had a rather small room now, which he didn't use very much, but the room in the basement he used for indoor football and other things, so he was not very keen to make this into his private room. The parents' argument was that he needed a bigger room so that he could have space for his new television with sur-round-sound, which they have encouraged him to buy, and for a computer they already had for him, which was now placed in another room. The son accepted this and agreed that he would probably use his room more if it was bigger and there were more ICT in it, but it was not something he really desired. Understanding the reason why the parents wanted their son to have a room he would use more, it was probably not because they didn't want to be together with him in the rest of the house, but more that they thought it was better for him. Also other parents expressed quite strongly that they thought it was important for teenagers to have good big rooms. In this sense the parents actually en-couraged their children to individuality in the family.

The strategies regarding computers and individuality were rather different in the different families. Some families had private computers for all or some members, and others had as many computers as members but none of them were private, other families again had one or two computers to be used by all family members. Many children and parents said that it was not important to have personal computers, what was important were to have access to one when you wanted to. Others, and this was primarily those very interested in technology, thought it was nice to have their own computers. This could indicate that for those, where the computer was more a part of status and identity, it was important to have it personally, whereas for others primarily having computers as a practical tool, what was important, was to have enough. It both cases however the family needed several computers.

To conclude on ICT and individuality we can see that it was as much the parents as the children that were striving for individuality, in the sense that parents directly encour-aged their children to have their own of every thing as it was the children themselves who wanted it.

Standby behaviour: Habitus, risk perception or routines?

Information and communication technologies use electricity while they are used and when in a standby-mode. Therefore the number and type of technologies, the pattern of use and the standby behaviour are all relevant aspects for under-standing electricity consumption. If only looking at the number, type and pattern of use, it can generally be con-cluded that none of the interviewed families were con-cerned about or even thought about energy conservation. How much to buy and how often to use it, was in no way di-rected by energy awareness, not even in those families that were actually quite interested in energy savings or environ-mental protection. Standby behaviour was a little bit differ-ent, as all of the families were actually aware that their standby behaviour influenced the level of their energy con-

sumption, even though most of them did not do anything about it. The question of how conscious reflections might influence actions is somehow the opposite of the concept of habitus and it can be understood as yet another part of the Risk society and late modernity as described by Beck (1992). Where the ideal of the modern society might be that well-informed citizens act rationally in accordance with their own and the common good, in late modernity the right knowledge and the right solutions may not be that visible. People have to trust different kinds of experts and have to make up their own solutions to those of the problems or risks that they as individuals find important. Climate change or other environmental problems following from energy consumption is one of the risks that we are facing today, which may be handled in many different ways of different individuals. In the following I will look closer at the inter-views to se to what degree and in what ways different risk perceptions may influence the standby behaviour. Risk soci-ety however is not the only theoretical line to follow in the understanding of standby. Recent contributions in consum-er theory has focused on that a strong focus on conspicuous consumption, status and style in consumer theory fails to see that the big majority of daily consumer actions are ordinary consumption based on routines rather than on symbols and communication (Gronow and Warde 2002).

One of the families, the father living alone with his son, al-ways turns off the standby. This family is in many other ways concerned not to waste energy or waste any other thing and their level of both water and energy consumption is rather low. The father explains that they once had a satellite dish, and when he realised how much electricity it used he be-came very conscious of turning off all their other appliances. He explained 'In my childhood we learned not to waste en-ergy, and this is just the same', furthermore he also taught his son to turn off the standby mode and both father and son found it very easy to do so, it was just a habit they had. The reason was economy, "Why waste money on something you don't get anything from". Environmental concern was not an issue in this family. In one way this family was an exam-ple of how habits learned in the father's childhood influ-enced what he taught his son, and thereby how habitus was passed on. On the other hand it is also an example of how new knowledge can be transformed consciously into new habits.

Also one of the other families were very concerned about turning of the standby. Here the father remembered a tele-vision programme years ago about the risk of self-igniting television set causing fires. Since this he had been very con-cerned and had taught his family also to be. The family was aware that this habit was also energy saving and they were happy about this, however energy saving was not the prima-ry reason that they did it. The father however had a compu-ter running as a server, hosting homepages for local sport clubs etc. and this computer was newer turned off. Asked, if he knew how much electricity it consumed, he answered that he had actually measured it (and thought it was 50-100 W) but afterwards he tried to forget it again, as he want-ed this computer to run, whatever the energy consumption. This family thus indicated that risk perceptions could effec-tively influence the daily habits of a family. The risk that worked most strongly however was not the global problems

but those that were much closer to the safety of the family – The risk of causing a fire.

One of the families was quite interesting. Though the family was actually very environmentally concerned and this concern affected quite a lot of their everyday life they never turned off the standby. The family had for instance decided not to have a car, and most of the foods they bought were organically grown. However the family' electricity consumption was high and they did not do anything to lower it. They knew about standby consumption, but said that they had actually never thought about changing habits. During the interview the mother and daughter started to think about why they hadn't done anything about their standby consumption. The mothers explained that she thought they were already doing quite a lot for the environment, so she didn't feel morally obliged to do more, and she felt that changing habits concerning standby behaviour could actually cause quite some discussions in their family. For them organic food and not having a car was a positive contribution to a healthy lifestyle, and something they felt good about doing and in that sense giving themselves something positive, at the same time as it generally was good for the environment. Turning off standby would not give them anything positive, only problems and the benefits for the environment were not very big. This family was on one hand a strong example of the post-modern environmental family, consciously deciding how to react to global problems. Electricity consumption however was just not a part of their concern for different reasons, which might be interpreted in a more conspicuous consumption manner. There was neither pleasure nor (green) status symbols in lowering standby consumption.

Finally many of the other families can be summarised in the following way. They were all aware of what standby consumption means, however they had not really done anything about it. The reason they gave for having done nothing was that it was difficult because the electric socket was often placed in a corner behind the sofa and thus not accessible for daily use. This in a very simple way illustrates how technology designs influences daily routines in an energy consuming direction. In new houses and when renovating, for aesthetic reasons, the electric socket is always placed in corners near the floor, whereas the old style, where the outlet is placed easy to reach just inside the door, makes it much easier to turn off the switch and thus the standby.

Conclusions

The study found that teenagers in a household entailed a considerably higher energy consumption than an average adult in a household, and we know that this is primarily due to washing and cleaning behaviour as well as use of information and communication technology (ICT). In this paper questions of what kind of ICT the teenagers have, why they have it and how they use it has be discussed.

In an ordinary middle-class family in Denmark it is normal teenagers have their own television set, hi-fi and mobile telephone and it is not unusual that they also have their own computer. Even though most Danish teenagers may have the same ICT, there can however be quite some variation in their use patterns both over time for the individual teenager and comparing one teenager with another.

Through the descriptions of the teenagers' ITC consumption, it is clear that considerations of energy savings among parents and teenagers in no way influence neither the purchase nor the use of the ICT, not even in families that are actually concerned about energy savings or environmental behaviour. The only subject that in some of the families was influenced by interest in energy savings was the question of turning of unused ICT as well as turning off the standby power. Understanding why teenagers on average consume more energy than adults, however, is not primarily related to standby behaviour, but to the number and the use pattern of the ICT. This study thus confirms results of many other studies on energy consumption and every day life showing how households energy consumption is driven by aspects which neither people nor energy policy relate to energy use (Aune, 1997, Gram-Hanssen 2004, Kuehn 1998, Shove 2003, Wilhite et al. 1996). The specific result here is that also among teenagers this is the case, and keeping in mind that teenagers consume more electricity than adults do and that teenagers are the adult consumers of tomorrow, this knowledge has to be converted into action to prevent a growing electricity consumption in households.

The fact that none of the families thought about energy in relation to the number or the use of the ICT should however not surprise us. Until now all policy and campaign activities regarding energy savings in households have focused on energy efficiency of appliances and on turning them off when not in use, and in many respects this policy has succeed, as energy consumption in Danish households has not increased for the last many decades. Now the time however has come when we must also take into account the growing number of new appliances, and the fact that there seems to be no limit to in this number.

If there would be political interest in making policy and campaigns also to influence the number and use patterns of appliances, results like the ones presented in this paper might be of relevance as a background for understanding the mechanisms behind purchasing and use of ICT among teenagers. The results presented here indicate that parents are actually very supportive of teenagers' ICT consumption. Furthermore it is described how mechanisms related to identity and social group membership combined with the desire for new and individualisation tendencies continuously move the norms of what is normal and necessary to have. Easy solutions to cope with this ever expanding mechanism do not exist, but the question of how to react politically however needs to be addressed.

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The Impact of Information and Communications Technologies on the Teaching of Foreign. Languages and on the Role of Teachers of Foreign Languages. Concerning the general availability of the necessary technology, recent statistics indicate that all Member States of the European Union are well on the way to achieving a satisfactory state of "network-readiness" which will facilitate and promote eLearning. The same is largely true of the pre-accession countries, which are making remarkable efforts to catch up and to bridge the digital divide. There will be a shift from passive consumption of ready-made programmes to independent building of content, tailor made for specifics groups or individuals. Modern Information and Communication Technologies in the Advanced Education of. Children. A.A. Korostelev, I.M. Morozova, M.L. Gruzdeva, Z.V. Smirnova, O.I. Vaganova, A.V. Chanchina, S.M. Maltseva. Abstract: Scientific and technical progress in the modern world is increasing its pace and is actively being introduced into educational process. Accordingly, the impact of information and communication technologies on the younger generation cannot be avoided. The article assesses the effectiveness of information and communication technologies implementation into the system of additional education for children. The authors conducted an experiment in which 26 children from the third year of study in the Navigation Circle of the city of Nizhny Novgorod took part. Information technologies are now bundled with communications capabilities and vice versa, making a focus on one and not the other virtually impossible. Furthermore, one ofthe difficulties in studying ICT use among children and teenagers is that statistics and studies are still limited, even within digitally privileged countries. Youth have traditionally been the early adopters of digital ICT, forging new patterns of information and communication behavior. The next generation of ICT users, those born after 2000, will move with even greater ease among the emerging information and communications technologies.