Sharing conventions for energy efficient lighting?

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Abstract

Since 2009 a part of the European Commissions' Eco-design directive has been levelled at domestic lighting, and with a strong focus on energy efficiency, only the most energy efficient light emitting diodes (LEDs) are to outlive the regulation within near future. However, the EU Commission struggles with the realization of a lower uptake than expected, particularly of LEDs. Studies show that this may be due to energy efficiency not being the only, or even primary, concern that people have when illuminating the home. However, the studies do not say much about how certain lighting patterns are maintained or may change. In this paper, aspects connected to the latter will be explored through a case study of a number of households in an ecological community in Roskilde municipality in Denmark. The study will be compared to another case study of lighting patterns in number of low energy, however more conventional households, situated in Stenløse municipality, also in Denmark.

Although some aspects concerned with illuminating the home seems considered 'common' across the cases, the actual deployment, and reasons given for the deployment, differ between the two contexts. The deployment of energy efficient lighting technologies such as CFLs and LEDs is higher within the ecological community in Roskilde than in the detached low energy houses in Stenløse. Policy-wise, this is interesting as both contexts of households have the same access to public information about energy efficient light, and the residents in both contexts should presumably be aware of energy and environmental aspects as they are living in houses that are results of environmental considerations.

Therefore this paper will focus on how certain practices involving light may be socially reproduced across time and space, but also questions why some patterns related to *performing* social practices seem to differ due to particular living arrangements and learning processes through sharing certain conventions.

Introduction – light, energy and everyday life practices

As a result of an emerging realization of shortage on energy resources, the European Commission launched an Eco-design directive for energy-using products in 2005. Since September 2009 a part of this directive has been levelled at domestic lighting, and with an increasing focus on energy efficiency, only the most energy efficient light emitting diodes (LEDs) are to outlive the regulation within the next couple of years. In the meantime, various domestic lighting technologies have entered the market, ranging from the surplus stocks of 1) the incandescent light bulb, to 2) halogen light bulbs and spots, 3) compact fluorescent light (CFL) bulbs and tubes and 4) LEDs, also both as spots bulbs.[1]

In order to try to guide the domestic consumer in terms of choosing the right energy efficient light, the Danish Energy Savings Trust (DEST) has published several guides through the last eight years, explaining advantages as well as disadvantages of the different technologies.

1. They are here listed in the order of least energy efficient technology (the incandescent) to the (about to be) most energy efficient technology (the LED) in terms of lumen/watt.

However, various studies (e.g. Wall and Crosbie 2009, Bladh and Krantz 2008, Bille and Sørensen 2007, Gram-Hanssen 2005, Wilhite et al 1996, Garnert 1994) suggest that 'lighting our home' is more than merely being an energy-consuming act of life.

To offer a few examples, Wall and Crosbie (2009) have studied behaviours connected to up-take of low energy light bulbs in British households, and argues that when studying energy consumption, the most interesting behaviours to take into consideration are those that are frequent, routinized and habitual. Their findings suggest that lighting patterns are connected to social norms, as the people interviewed often refer to aligning lighting patterns with family and friends, and that it is through enquires with people from one's social relations that shape what kind of light that is actually purchased. They also find that it is through terms such as 'bright' and 'lovely' that people describe their desired light bulbs. More technical and economic issues such as problems with fittings and high prices are, however, also among their findings in terms of what constrains uptake of low energy light bulb technologies. Krantz and Bladh (2008) also present a small scale study of Swedish households, and much in line with Wall and Crosbie (2009) they find that cost and fitting issues causes problems for the uptake of low energy lighting technologies, however they go further to suggest that cultural aspects differences influence lighting constellations – finding that Swedish households have many small lamps in every corner of the house, being quite different from lighting constellations in many areas of the southern part of Europe. These findings are much in line with what Wilhite et al (1996) find when studying lighting constellations in Norwegian and Japanese households respectively, as Norwegian households primarily have lots of small lamps and a preference for dimmed light, whereas the Japanese households primarily are lit with bright, fluorescent light, and with fewer lamps.

However, existing studies neither seem to go into detail with how these various lighting patterns come about nor how and why these patterns are maintained, and even less about how they might change. And these are interesting aspects to take into consideration when trying to obtain energy efficient lighting patterns.

Therefore, this paper sets out to explain patterns and aspects of 'illuminating the home' in a Danish context, and how and why certain patterns seem to be performed and maintained consistently across households. To demonstrate this, a case study that I have presented in detail elsewhere[2], will be briefly introduced. This case study will in the following be referred to as the Stenløse Syd case. However, the main intention of this paper will be to further show how and why another group of people seem to perform practices connected to general lighting patterns differently, *in spite* of certain general and seemingly unquestioned tendencies appearing *across* the households. To demonstrate this, a second case study will be presented in detail. This case study will in the following be referred to as the Munksøgård case. In conclusion, the findings will be discussed in terms of implications for wider scale policy intensions. However, before proceeding to the case studies, a framework for understanding light as part of *everyday life practices* will be presented in the following, based on theories of practice.

2. The Stenløse Syd case is presented in detail in Jensen et al, 2012.

Theoretically speaking: Dynamics of consumption associated to energy related everyday life activities

Social practice theory can help us understand how practices in everyday life work, and how people engage in them. Usually the theory is applied to understanding practices in two ways – practice-as-entity: how a practice is a socially constituted mechanism that somehow appears 'universal', – and practices-as performance: describing how people perform/oppose certain practices, as people as *carriers of practice* perform/contribute to practices in different ways (Reckwitz, 2002, Røpke, 2009, Gram-Hanssen, 2011). These two dimensions of practice are however mutually dependent, as a performance presupposes a practice (Warde, 2005), and a practice does not exist if not performed. What actually constitutes a practice is, however, still discussed. Several strands of theories of practice, particularly in relation to consumption, seem to agree on a practice being constituted a number of elements, namely *images/meanings*, *skills/competences* and *products/materials* (Shove and Pantzar 2005/2010, Warde 2005 , Reckwitz 2002 and Gram-Hanssen, 2011). Gram-Hanssen (2010, 2011) elaborates the interplay of images, skills and material into four dimensions particularly for understanding energy consumption, by distinguishing between certain forms of skills, namely 1) Engagement, meanings, 2) Practical understandings, know-how, embodied habits, 3) Institutionalized knowledge, explicit rules, language, and 4) Products/'things'/technologies.

The element of practical understanding, embodied habit or know-how, is related to Reckwitz' (2002) notion of people as *carriers* of practice. By performing in a certain way, people respond to patterns that constitute and sustain a certain practice. Explicit rules and institutionalized knowledge play an important role as well, as practices are reproduced within, and because of, certain frames. Explicit rules play a role for how products are developed (and vice versa). In terms of meanings and engagements, meaning accumulates through participating and being engaged in certain practices (Gram-Hanssen 2010). Therefore the *elements* of practice are important for how *performances-of-practice* unfolds.

When discussing consumption in terms of practices, Warde (2005) explains that consumption is not in itself a practice, but can be seen as a moment in almost every practice. Appropriation happens within practices, as things get worn out (cars are purchased, used and worn out in the practice of driving). As Warde (2005) explains, "items appropriated and the manner of their deployment are governed by the conventions of the practice; touring, commuting and off-road spots are forms of motoring following different scripts for performers and functions for vehicles. The patterns of similarity and differences in possessions and use within and between groups of people (…) may thus be seen as the corollary of the way the practice is organized, rather than as the outcome of personal choice …". What may be of particular interest in this explanation in relation to what is to be unfolded in this paper is the explication of the *similarities and differences in possessions and use between different groups*. As Shove et al (2012) explains "Practice-as-entity [is something that] exists between and beyond specific moments of enactment. Practices are then carried, sustained and transformed by cohorts of practitioners (those who do). Practice-as-entities would not exist without reproduction, and

reproduction depends on localized instances of performance". Paying attention to the emphasis on performance and reproduction of practices being determined through *groups and locality* may help explicating some of the dimensions that seem to influence the way people use and relate to light within the home in different contexts. And what is more, it may help to point out how and why certain localized performances may result in less energy intensive practices. In this way, it may be possible to understand what the aspects of energy consumption mean in respect to illuminating the home, and to what extent certain elements of practice may support or constrain less energy intensive everyday life practices in terms of lighting.

An example of domestic lighting and related everyday life activities – the case of Stenløse Syd

To set the scene of what may be characterized as a quite normal and mundane example of domestic lighting patterns in Danish households, a short introduction to a case study is given in the following. As mentioned in the introduction, this study is presented in detail elsewhere, but the main findings is presented here for the purpose of comparing the lighting patterns found in the Munksøgård case study.

In order to explore and unfold aspects of 'illuminating the home', interviews were conducted with the residents of 8 low energy households in Stenløse Syd municipality in Denmark. The interviews were subsequently transcribed and themed on terms of the elements of practice introduced above. The reason for choosing the households in Stenløse Syd was that residents in this kind of household may presumably be able to relate to, and talk about, energy consumption, as the energy consumption is made 'visible' through smart meters and information schemes. Yet, as all houses are one-family, detached houses, and none of the residents had any particularly outspoken environmental interest, it can be assumed that the everyday lives in terms of energy consumption within these low energy houses can be compared to everyday lives in what may be termed as more conventional houses. However, one important distinction may deserve some attention. If the rational-actor assumption for behaviour change, which has much leverage in policymaking (Shove, 2010), is to be applied for how everyday life and energy related behaviour unfolds within the frames of the home, it should be assumed that the residents in low energy houses equipped with information technology would reflect a somewhat energy efficient domestic lighting pattern. But since that appeared *not* to be the case, it leads one to question whether residents in conventional houses, without any immediate interaction with energy consumption information would then reflect any particular energy efficient lighting patterns. It may even be reasonable to question whether the rational-actor assumption is at all very applicable when aiming for energy efficient everyday life. As can be seen from the following brief exposition[3], it seems fair to suggest that context and inconspicuous activities or practices, connected to energy consumption, is at least as important to consider when trying to understand what enforces energy consumption. Table 1 will sketch out the findings from the Stenløse Syd household interviews in relation to the three elements of practice described above.

WHAT MAY THIS ENTAIL?

That the residents in the Stenløse Syd case mainly refer to the activities for which they need light when they talk about and relate to their domestic lighting patterns, correspond very well with what Krantz and Bladh (2008) also pin out; – the energy consuming act of lighting the home is very complex and implicit, and it is the contexts and activities of which light is part of that bear meaning for the residents, such as for instance cooking and reading etc. As new kinds of ambient lighting patterns facilitated by the halogen spots and its lighting properties appear to have emerged *along* with the introduction of the various more or less energy efficient, it is interesting to pursue in what way social practices influence lighting patterns. And this is particularly interesting as these patterns are questionable in terms of actually being less energy intensive than previous incandescent lighting patterns. But since the Low Energy Houses' information technology did not seem to bring about any more energy efficient lighting patterns, it is also interesting to look further into whether a broader focus on energy efficiency *as well as* social responsibility and environment would facilitate less energy intensive lighting patterns, and how practices involved with these patterns might interact with the shaping of these patterns.

To explore this, interviews has been carried out with 8 households in an ecological community, Munksøgård. Munksøgård was established in 2000 and all the residents involved in the study has been involved in the process from the beginning, most of them even in the planning phase prior to the actual construction phase. Munksøgård is a result of a project about establishing a community focused on social functions, environmental considerations and local management (Munksøgård homepage, 2013). The background and reasoning of the scheme is thus wider than the background of the low energy house area, where complying with building regulations for low energy houses were of main focus. As will be seen from the following assessment of the Munksøgård case, several aspects influencing the way the residents live with, perceive, and utilize light have to do with sharing collective conventions in terms of energy and resources. Therefore the following paper will explore not only the differences between elements of practices performed at Munksøgård compared to the findings from the Stenløse Syd case, but also dimensions of how adjacent practices influence each other, perhaps helped by sharing conventions and meanings in a local context.

Moving away from energy efficiency being an 'add-on' to becoming a more integrated part of everyday dwelling – the case of Munksøgård

The interviewed residents at Munksøgård have, as mentioned, been part of the Munksøgård project prior to the houses being built, and many of them got engaged with the project due to the community aspect but also because of it being a community focusing on ecology and local management. The houses in the community are divided into subgroups, arranged in circles,

3. As mentioned, a detailed description of lighting patterns and related practices in the Stenløse Syd case is given in Jensen et al, 2012.

Table 1. Lighting and related dwelling practices – the case of Stenløse Syd.

Elements of dwelling practices	Stenløse Syd Households
Material: product/technology	Incandescent light bulbs, halogen spots, few CFLs – large amounts of halogen spots are installed, and many, small lamps are distributed around the house, mostly in corners of the rooms. Ceiling lights are considered functional light that is used when there is a need for a lot of light, to see details or to find things.
Skills: a) institutionalized knowledge/language + b) embodied habits and know-how	The incandescent light bulb is referred to as the 'normal' light. Terms such as warm, cold, ugly and unpleasant are used, and only few refers to technical terms such as colour temperature, wattage etc. Turning lights on and off is to some extent associated with creating the right mood in the areas of the house. Less associated with saving energy. The residents generally discuss what kind of light they prefer, as well as the amount of light they think they need in terms of activities. For instance, dimmed light is associated with cosiness that would be needed for dining and entertaining guests, where as bright light would be needed for working (such as studying as well as cooking). These aspects seem unquestioned across the households, and are referred to in more or less the same manner. Few of the residents are able to clearly differentiate between the various lighting technologies, and most of the residents have in general had bad experiences with LEDs mostly in terms of what they refer to as the colour and quality of the light. Most, if not all, of the residents seem to have more or less rejected the LED as an alternative.
Meanings/engagements	Light is used to facilitate different forms of homeliness, connected to activities in the home (cooking, reading, dining, bathroom activities etc.). Incandescent light is associated with 'warm' and 'comfortable' light, whereas light from CFLs and LEDs is generally associated with 'cold' and 'unpleasant' light. Halogen spots and bulbs are preferred as substitution for the incandescent, and a number of spots are deployed mostly in the kitchen and bathroom, which has entailed new and more ambient lighting patterns in these rooms in particular in relation to previous constellations. Energy efficiency in terms of lighting is primarily viewed as a sacrifice on quality, or something one would have to 'go an extra mile' to get.

with main entrances facing each other. The houses are one-family terraced houses or flats. It is important to note that the houses are similar to 'standard' houses in design – the residents in Munksøgård did not want the community to be experimental in this sense. As one of the residents, Anna[4], states, when describing the initial planning phase: "we wanted to live in an as environmentally friendly house as possible, which at the same time was a standard house. Then it would not be exclusive homes, and we would be able to finance it as with regular houses [due to Danish mortgage loan rules]" (this and all other citations are translated from Danish transcripts of interviews). However, toilets are alternative and the houses are insulated with paper wool, and the structure of the houses is of wood, which in 2000 was unusual for two storeys houses.

The interviewed residents were recruited in one of two ways; either by personal request as I was invited to take part in one of the triweekly communal dinners at Munksøgård, or as a respond to an email I had sent out to all of the residents. Three households responded to the email, and five households were required by random, personal request at the dinner. All residents were told that the interview would be about their experiences with light in the home, and was informed that it would include a tour around their house to talk about each lamp and the activities connected to them.

In general, much the same constellations of lamps exist in Munksøgård as in the households in Stenløse Syd. Lamps are situated in the corners around the house, particularly in the living room. Ceiling lights and bedside lamps are installed in bedrooms and spots generally dominates the kitchen or the bathrooms, whether it is implemented under the cupboards, or whether it is small spots in lamps hanging over the sink. Some of the bathrooms are equipped with one CFL concealed within a white lampshade above the mirror, however the most common layout, that was also found in most of the households in Stenløse Syd was comprised of a ceiling light and a couple of spots above the mirror.

What is interesting, though, is that many of the interviewed residents refer to the halogen spot as being an energy-intensive lighting technology, whereas many have replaced a number of the halogen spots with LED spots. This is interesting, as the halogen spot is generally treated as an energy saving technology in the Stenløse Syd case. The lighting technologies that are

4. The residents are referred to by their first names as has been agreed upon. Surnames will not appear in the paper or the transcripts.

dominant in the interviewed households are CFLs, LEDs and halogen spots, which also differ rather distinctively from the dominant composition of lighting technologies in the Stenløse Syd households. To try to unfold how and why there is this difference in utilized technologies, the Munksøgård household interviews will in the following be discussed through the elements of practices concerned with illuminating the dwelling.

PRODUCT/TECHNOLOGY

In general, the interviewed residents have installed CFL bulbs in most of their lamps. However, exemptions are found and these are for various reasons. Niels has a lot of fluorescent light bulbs. He however does have two incandescent bulbs. One is found in an unplugged lamp, and he is unsure of what kind of bulb is in it. So it seems to be a mere leftover. Yet, he does also have an incandescent light bulbs shaped as a chandelier bulb in his bedside lamp. He refers to it by its shape, and suggests that this shape is needed for this kind of lamp. There is therefore a strong association connected to this shape, and where it fits, but for reasons that are not very explicit, which might also be connected to more inconspicuous technological lock-ins. Niels also has a number of halogen light bulbs in his kitchen and bathrooms, like a number of other residents, in both cases. Claus mainly has CFLs, however halogen as well as LED spots in his kitchen. He has one incandescent light bulb in one of his children's room, and as he realizes this during the tour of the house he genuinely reacts surprised to discover that it is there. He claims that it should be replaced at once. A reaction that is very different from how many of the residents in the Stenløse Syd case associates with the incandescent bulb. In general Claus promotes the LED as a general light source, and this is especially clear as he has been engaged with setting up a LED showroom in the local supermarket, together with the shopkeeper and another resident. This will be further explicated in the following section.

Mick and Trine have LED bulbs installed in all there lamps, and are in general associating the LED light with quality light. They admit to it being a bit too bright at some occasions, and in general refer to the fluorescent light as being better as cosy light. This is in direct contrast to what a number of the Stenløse Syd residents' state, as they often associate the CFL with cold and/or uncomfortable light.

Bolette has installed low energy fluorescent bulbs in all her lamps, except from a lamp above the dining table that is bought with small halogen lights. She bought the lamp as she regarded it as a small piece of art, and not primarily as a lamp. She wants to try out LED's but is in general a bit put off by the price. Tina and her husband have installed CFL and LED's, with a few halogen spot exceptions in the kitchen. They have switched out some of the halogen spots in the bathroom (that came with the bathroom) with LED spots. They have not switched all of them due to the fact that if all halogen spots are replaced with LED spots, not enough current will then run through the preinstalled transformer that supports the halogen spots, resulting in the LED spots not working. Lotte and her husband have installed CFL and LED's all over, except from a few halogen spots in the kitchen and the main bedroom. They have replaced some of the halogen spots that came with the kitchen, with LED spots. Lotte points to the fact that the kitchen wall has a different colour in the area where the LEDs are placed. Even though she states that she thinks the colour was more beautiful in the halogen light, she claims to have no intentions of switching back. In fact she explains that she wants to replace the rest of the halogen spots in the kitchen eventually, as well as the two halogen spots installed in the bedroom, as she does not like the halogen spots, mainly due to them breaking easily and due to them falling out of the sockets. But she also refers to the energy aspect of the halogen spots that consume more energy than the LEDs. Anna and her family have a mix of mainly CFLs but also a number of LED's, both as spots and bulbs, as well as halogen spots. The halogen spots in the kitchen came with the kitchen. She also refers to having halogen light due to the fact that some of their lampshade/sockets are *made to fit* halogen spots, which also suggests that some technological lock-ins at the moment favour the halogen spot. Anna and her husband chose, like Tina and Lotte, to replace some of the halogen spots with LED spots, but like Tina, they had to leave one halogen spot due to the same problem with low current. In Munksøgård, only one of the interviewed households applied incandescent light bulbs intentionally. She states "I turn of the light as soon as I don't need it … however, then I take the liberty of using these (the incandescent bulbs), even though they consume too much energy …". She implies that she knows that the incandescent bulbs are energy intensive, and that she thereby needs to find other ways of saving energy. Interestingly, she does in fact have considerably fewer lamps than a number of the other residents.

PRACTICAL UNDERSTANDINGS AND (EMBODIED) KNOW-HOW (COMPETENCIES)

In regards to practical understandings and know-how, it is interesting to note that the lighting constellations, as previously mentioned, are more or less the same in the Munksøgård households as in the Stenløse Syd households – however a number of the residents have tried replacing some of the halogen spots with LED spots. The result various, as some of them, as mentioned, experience that they cannot replace all halogen spots with LEDs. It is due to the transformer, often being built into the kitchen cabinets, and therefore not visible, which does not function as intended when LED spots are installed. This is, as also mentioned, due to the amount of current running through the system is then getting too low, as transformers that are used to run halogen spots generally require a minimum net current that is higher than what a replacement of LEDs consume.

A lot of associations between what kinds of bulbs are needed for which kinds of lamps seem persistent. As mentioned above, Niels has installed an incandescent chandelier bulb in spite of generally advocating for CFLs which may imply that he does not know that low-energy versions of chandelier bulbs exists (for instance in LED), and therefore attribute the well-known shape a certain embodied association.

Ina expresses that she knows little about lighting and the related technical systems, and that it often frustrates her. However, she does care about the quality of her light, and express that this is the reason for holding on to the incandescent light bulbs, and therefore indulging the well-known technology. These things seem to form an example of how much products and the actual practical and embodied knowledge about the products and systems consumed may influence each other.

Aspects such as turning off light, and having small lamps creating an ambient light seems to some extent to be mattes

of embodied reproduction of 'what to do when you illuminate the house'. As an example, Ina and Anna both mentions that it has become a habit to turn of the light when it is not needed. However, it is not explicit *when* it is not needed. Some of the other residents refer to turning of the light when not in the room or that the light source is only lit when in the room. At some point in during the interview, Anna reflects about why she turns down the 'volume' on the light, by dimming it, or by turning of some of the light sources. She mentions that it has just 'come to be like that'. She does not know exactly why, but when reflecting about it she immediately wonders whether it is because she uses light to create cosiness, as her daughter explicitly does. Although she concludes that it is probably by practical reasons (without explaining in what way practical, but probably referring to the energy consuming aspect of having light turned on, as she talks quite a lot about this), she infers that it is okay if the dimmed light then *results* in a cosy lighting atmosphere. For whatever reason Anna dims her light, it is interesting that she refers to cosy light in that same reflection, even without really knowing whether that is actually something she actively wants to obtain. She talks about her lighting patterns as something embodied, that she does not usually reflect upon. She is just doing it in a certain way, without being aware of exactly why. As the patterns she adopts are usually ambient and dimmed, it suggests that there is some kind of 'common' way of illuminating the house that has become more or less embodied. This suggests that there might be some aspects of the practice behind illuminating the home that is expressed as an entity-like part of practice, which is then reproduced through performing the actual 'illuminating the home'. This is in general a matter for most of the residents, at it often appears to be unnatural to talk about lighting patterns. And often the residents explain their lighting patterns by means of the activities connected to the various rooms. This seems to be much the same case for the residents in Stenløse Syd, which to some extend infers that the lighting patterns are embodied and not necessarily reflected upon.

INSTITUTIONALIZED KNOWLEDGE/LANGUAGE

In terms of 'language' connected to light and light sources, as well as institutionalized knowledge connected to both old and new forms of lighting, quite a few of the interviewed residents seem to have engaged in trying to understand these things in various ways. Mick in particular knows about the language connected to the new forms of light presented by LEDs. He often mentions the term Lumen during the interview when referring to what kind of bulb he has installed. He has gotten to know about LED light as he engaged himself in refurbishing the light in their common house, which they wanted to be more energy efficient. Claus has gained quite a lot of insight in LED technologies as well, partly through co-establishing the LED showroom in the local shop together with two other Munksøgård residents. Anna has also gotten to know about it while refurbishing their summerhouse, as they needed to find some energy efficient lighting solutions due to the summerhouse being supplied solely by solar power. She is aware of LED spots not working fully with transformers for halogen bulbs, and therefore, as mentioned, she and her family have installed four LED spots, and one halogen spot to avoid the issue of minimum flow of current. Although many if the residents also draws on terms such as 'good' light, the Munksøgård residents generally seems to be more aware of some of the terms that are necessary to know about when trying to navigate the LED market – here in particular lumen. There is definitely a difference in how much the residents in Munksøgård have engaged with getting to know various lighting systems and their workings, compared to the residents in Stenløse Syd.

However, Ina explicitly explains having difficulties with installing the light that she prefers, because she knows little about the technical aspects. Her preferring the incandescent bulbs may also be related to having known those kinds for a while, and therefore associates it with reliability. It may, however, also be connected to how we talk about cosy light. In the Stenløse Syd case, most of the residents associate cosy light with incandescent light. And in general, the residents from each case express something about cosy light. But what can actually comprise cosy light seems significantly different in the Munksøgård case than in the Stenløse Syd case. And that may be connected to another element of practice, namely the meanings attached to what cosy light is, and how it should be obtained.

MEANINGS/ENGAGEMENTS

In both Munksøgård and Stenløse Syd, cosiness in particular seems to play an important role. Almost all of the interviewed residents in both cases at some point refer to cosiness, and it is often associated with small lamps lit from more than one angle. Mick, from Munksøgård, at some point reflects about why he turns on one or more lights when working at the computer or watching TV: "It is actually kind of funny […] because there is plenty of light from the TV […] it is just cosier with light from more angles." Claus states that he finds it important that lighting in his house is cosy, and that the light is shed from more angles as well. Particularly in the dining situation, he associates dim light with sitting near a fireplace. Anna, who seems to want to disassociate herself from intentionally acquiring cosy-light, even refers to not being particularly fond of the bright fluorescent light she has encountered in southern European countries, admitting to be fonder of the dimmer light.

However, although cosiness seems to play an important role in both cases, the way the cosy light is *achieved* is different, as it is utilized through different kind of products. And this is interesting, as choice then in particular seem to reflect something else than mere access to information, as both kinds of households have equal access to public information about energy savings for lighting.

The many CFL bulbs present in the Munksøgård case is but one thing to note. The other, perhaps more important aspect to this is that many of the residents refer to it as a regular light bulb, and have neither articulated emphasis on why these are installed, unless asked, nor do they have any particularly negative associations about the technology. When directly asked about the bulbs, energy aspect often enters the picture, however in general it just seems to be treated as the kind of light bulb one would regularly have. As Tina puts it: "I don't remember ever having bought an incandescent light bulb … so we don't have that … we didn't have that in our previous home either … I mean … why would one buy incandescent bulbs? They may be cheaper, but not in the long run … Because they … well they use 10 times the electricity … plus you would have to replace them a couple of times during the year." What is further interesting in this respect, is how meanings connected to

aesthetics seem different in the Munksøgård case. As already mentioned, Lotte and her husband accepts the new and less desired colour on the wall that is a result of installing LEDs but the point seems even further explicated as Lotte has a CFL in her PH lamp (well-known Danish design), which is a lamp in which most Danish people oppose installing a fluorescent light bulb. When she is addressed with this issue, she answers: "Yes, I know a lot of people say that. I think it is fantastic for fluorescent bulbs … because … it [the lamp] breaks the light in many ways … and it has the colours and things like that … so I think it is a perfect lamp to install fluorescent bulbs in … and they have always been able to fit in this [referring to something she earlier stated, having lamps where it was difficult to install the old, rather bulky fluorescent bulbs without being able to see them]. I actually think it was the first one we replaced …" This aspect, and the fact that Lotte and her husband have kept the LED spots in spite of them resulting in the kitchen wall getting another, and to them less preferable colour, seem to point to them being willing to reinterpret what aesthetics are and mean in relation to the energy savings gained by choosing more energy efficient lighting technologies. In Stenløse Syd, many of the residents chose to switch back to halogen spots when experiencing undesirable results with the colour of the LED light. Anna also chose to switch back to halogen spots after having experimented with LED's for approximately a year. However, she chose to switch back only in the kitchen, where she experienced not having *enough* light. She and her family kept LED spots elsewhere in the living room, and thereby found use for LED in certain parts of their house.

Although Tina reflects *never* having purchased incandescent light bulbs, there are reasons to believe that staying in a community like Munksøgård facilitates the tendency to buying low energy bulbs. As Bolette says when inquired about her fluorescent bulbs: "… it is something we have held on to … it is not something they write to us about … but it is a general principle I think … and, well, we also have a box for used bulbs down there [at the local recycling station at Munksøgård]." Ina, having a number of incandescent bulbs, also refer to the other residents probably thinking that this is inappropriate, however also emphasizing that no one would point a finger at it. She in fact mentions that she has been given some incandescent light bulbs by neighbours who were in a process of replacing their incandescent bulbs with new kinds. Not merely throwing it out further supports the resource oriented approach of life on Munksøgård.

In the following, examples from the above analysis are related to Table 2 presenting the Stenløse Syd case.

The similarities as well as the differences across the cases are interesting to pursue. There are certainly aspects that appear to be performed across the cases, and these ways of performing equally appears unquestioned, such as cosiness, layout of lamps, the tendency to apply spots, and how one uses light differently between activities such as dining and cooking. For dining, dimmed light is preferred, for cooking, bright and clear light is preferred. This suggest that there are certain dwelling practices, such as cooking, dining, entertaining, showering etc., that are carried out more or less consistently, where light and light-spaces play a certain and more or less unquestioned role. However, the materials/products applied differ substantially. As both household contexts have equal access to public information about energy efficiency for lighting, information alone cannot be the reason.

What is more, the households in Stenløse Syd actually have access to a more aggregated overview of the households energy consumption through the smart meters installed than what the residents in Munksøgård have access to. So if it is believed that information about energy consumption in itself should evoke more energy efficient patterns in the everyday life overall, it does not seem to be the case here. Then what does facilitate the differences? One explanation will be presented in the following.

Discussion: Sharing conventions – How moments of sharing may matter in terms of breaking links for energy intensive practices

Bolette directly refers to it being a general *principal* to be environmentally aware and to save energy at Munksøgård, and Ina talks about the other residents probably considering her use of incandescent light bulbs a waste. This and other statements directly related to aspects of 'living together' indicate that the community aspect of Munksøgård is important for how the residents live, think of and interact with consumption.

Anna mentions how she and her husband wanted to live somewhere, where you would do more with your neighbours than just say 'hello' and 'good bye'. Mick explains that he wanted to live somewhere, where people would want to take responsibility for the environment, after experiencing a neighbour to his parents throwing a printer out with household disposal. Bolette refers to being happy about living somewhere a bit *revolutionary* – where people do something for the environment. The dimension of *sharing* as part of everyday life therefore seems of significance. This is in one way evident in how most of the interviewed residents are part of various working groups at Munksøgård. For instance Bolette and Anna engage with working waste management, handling how the Munksøgård residents sort their waste at the local waste station. The waste is then picked up by the municipality. They pre-sort their waste in many different fractions, including a box for light bulbs (except incandescent bulbs that can be disposed with household waste). The waste station also contains a swopping station that allows people to hand in clothes and furniture that they are not using anymore, for other residents to take if they want. The same principle is incorporated at the local café, where people can leave used books. Mick is taking part of handling the IT for Munksøgård, together with Tina's husband and Lotte is mainly engaging in the working group handling Munksøgårds local wastewater system.

The fact that the Munksøgård residents participate in this many aspects of containing life on Munksøgård may co-explain why there is a tendency for the Munksøgård residents to have more energy efficient lighting technologies installed, at least compared to the Stenløse Syd case. This corresponds well with what Warde (2005) explains about practices rubbing off of each other through the way they are performed. He states that "practices are not hermetically sealed off from other adjacent and parallel practices, from which lessons are learned, innovations borrowed, procedures copied." Actively taking part in performing practices around waste-handling and recycling may give a certain embodied insight in how resources come about, which may rub off on how one think about resources when install-

Table 2. Lighting and related dwelling practices – the case of Stenløse Syd compared to the case of Munksøgård.

Elements of dwelling practices	Stenløse Syd Households	Munksøgård Households
Material: product/technology	Incandescent light bulbs, halogen spots, few CFLs – large amounts of halogen spots are installed, and many, small lamps are distributed around the house, mostly in corners of the rooms. Ceiling lights are considered functional light that is used when there is a need for a lot of light, to see details or to find things.	CFLs, LEDs and halogen spots. The layout of having a number of spots in kitchen and bathroom is repeated in this case, however a number of LEDs have been installed instead of halogen spots. Small lamps in various corners are also present, as well as the ceiling light being viewed as functional light. So many of the same 'structures'/layouts seem to be reproduced in the Munksøgård case, however the products deployed differ.
Skills: a) institutionalized knowledge/language + b) embodied habits and know-how	The incandescent light bulb is referred to as the 'normal' light. Terms such as warm, cold, ugly and unpleasant are used, and only few refers to technical terms such as colour temperature, wattage etc. Turning lights on and off is to some extent associated with creating the right mood in the areas of the house. Less associated with saving energy. The residents generally discuss what kind of light they prefer, as well as the amount of light they think they need in terms of activities. For instance, dimmed light is associated with cosiness that would be needed for dining and entertaining guests, where as bright light would be needed for working (such as studying as well as cooking). These aspects seem unquestioned across the households, and are referred to in more or less the same manner. Few of the residents are able to clearly differentiate between the various lighting technologies, and most of the residents have in general had bad experiences with LEDs mostly in terms of what they refer to as the colour and quality of the light. Most, if not all, of the residents seem to have more or less rejected the LED as an alternative.	The CFL is referred to as the 'normal' light. Terms such as warm and cold, pleasant and unpleasant are also used in this case, however the cold light that some CFLs emit is not regarded as unpleasant. Unpleasant light is only referred as ceiling light without any smaller lamps to support it. Technical terms are expressed and used to a larger extent than in Stenløse Syd. Turning light on and off seem to be a bit more associated with saving energy, however using light and no light in order to create a certain mood in the room seems to be of importance as well. Light is in general explained in relation to relevant dwelling activities. In spite of many of the residents having had bad or unsuccessful experiences with LEDs they have far from rejected the technology.
Meanings/engagements	Light is used to facilitate different forms of homeliness, connected to activities in the home (cooking, reading, dining, bathroom activities etc.). Incandescent light is associated with 'warm' and 'comfortable' light, whereas light from CFLs and LEDs is generally associated with 'cold' and 'unpleasant' light. Halogen spots and bulbs are preferred as substitution for the incandescent, and a number of spots are deployed mostly in the kitchen and bathroom, which has entailed new and more ambient lighting patterns in these rooms in particular in relation to previous constellations. Energy efficiency in terms of lighting is primarily viewed as a sacrifice on quality, or something one would have to 'go an extra mile' to get.	Light is used to facilitate forms of homeliness and it associated to activities in the home as well. However, incandescent light is not associated with the appropriate light source to facilitate this, whereas many of the residents in fact refer to the CFL as being the cosy, yellowish light (compared to LED light). The halogen spot is in general referred to as a somewhat energy intensive technology, which is in opposition to how it is generally referred to in Stenløse Syd. The tendency to install spots and thereby obtain an ambient lighting pattern in kitchen and bathroom seems unquestioned in Munksøgård as well. Energy efficiency generally seems to be treated as something 'one would of course try to pursue' and for instance CFLs are treated as the light source, and not necessarily referred to as energy saving, implying that energy saving is more implicitly integrated in the Munksøgård lighting patterns.

ing light that needs to facilitate everyday life dwelling. Further, sharing washing machines and cooking together, which is done in the common houses, may facilitate a social learning process around sharing resources. More explicitly, Shove et al (2012) discusses how elements can be shared between practices; – if the element of meaning in the practices of waste-handling associates' importance to reducing wasted resources, this may play a role for the element of meaning and engagement in a practice around illuminating the home.

Warde (2005) notes that "Empirical evidence indicates differences between groups of people with regard to their understandings of a practice, the procedures they adopt and the values to which they aspire (…) It is worth considering that the three components of the nexus identified by Schatzki (understandings, procedures and engagements) may vary independently of one another between groups of participants". This seems to be supported by the variation found in products deployed in practices connected to illuminating the house across the Stenløse Syd case and the Munksøgård case, as well as particularly the meanings and engagements connected to it, but also in terms of variations in institutionalized knowledge in terms of knowing the 'language' connected to the new LED lighting technology, and to a certain extent variations in embodied habits connected to illuminating the home.

Since the Munksøgård residents seem to be more likely to utilize more energy efficient lighting technology in spite of certain seemingly unquestioned aspects connected to various dwelling practices that include lighting, it is interesting to explore how the *community* aspect of living in Munksøgård potentially play an active role in this. According to Wenger (2000), all human beings have relationships with various communities of practice that enable us to know the things we know, and 'knowing' is an act of participation in complex social learning systems connected to these communities of practice. Wenger (2000) defines learning in terms of social competence and personal experience, as well as three modes of belonging, through which we participate in social leaning systems. Social learning systems and modes of belonging can be anything from global to local interactions, and it is the latter that could be interesting to follow up upon in the case of Munksøgård. According to Wenger (2000) these following three modes of belonging are essential for a community of practice to work; 1) engagement in terms of doing things together, talking and helping out, 2) imagination in terms of constructing an image of oneself and the community one belong to, and 3) alignment in terms of making sure that local activities are sufficiently aligned with processes so that they can be effective beyond one's own engagement. All of these modes seem to be present at Munksøgård, as 1) residents discuss various things, here amongst lighting technologies and how, when and where LEDs can be used, 2) there seem to be a strong idea of being environmentally aware and standing out from the crowd in terms of taking responsibility for the use and handling of resources etc. and 3) systems and processes are created in order to be able to follow through with these things, for instance through the working groups, and the taking part in them. Although this may seem somewhat disheartening in terms of obtaining this on a wider societal scale, many lessons can be learned. For one it seems important that there is created some sense of meaning in terms of why, how and when one should deal with and think about energy consumption. Technological optimization and energy efficiency in itself does not necessarily make sense in everyday life. Further, structures and systems that support being 'energy efficient' seem important, as the act of being energy efficient needs to mean something in a wider context. Resources and the use of resources do not necessarily make sense in an isolated way.

One specific initiative that may have had some influence on some of the residents interaction with and learning experience around LED, is the LED showroom that is already briefly mentioned earlier in this paper.

Claus and another resident of Munksøgård, Paolo, decided to establish a small showroom of LED lighting, and they agreed with Bjarne, the local shopkeeper, to put it up in the local shop. Each of the interviewed residents at some point refers to the showroom during the interview. All of them know about it, some of them have been around to see it, however no one have really made use of it. This is primarily due to the bulbs not being updated, as the market changes so quickly and it is difficult for Bjarne to follow the pace. It has however initiated, or at least co-shaped some discussions about LED across the dinner table at the triweekly dinners in the common houses, and it has to some extent made an impression on at least the interviewed residents, as all of them knows about it, and feel like it is worth mentioning during the interview. According to Claus, and the local paper Roskilde Dagblad's interview with Paolo, the reason for creating this showroom was to *help other people avoid some of the mistakes* that Claus and Paolo made themselves when switching from fluorescent light bulbs to LED light bulbs. Claus, Paolo and Bjarne have no revenues on the project, as they have developed it on a voluntary basis. They argue that in order to avoid hurdles with choosing the right LED light, people need to see what the bulb looks like, and therefore they installed bulbs for people to come see, switch on and off, and with the possibility to link directly to a webpage where the exact bulb can be purchased, through a computer that has been installed in the shop. As Paolo states in the local paper; "The few models you can normally find in a shop are usually made for an exhibition, and cannot be used in the home. If you get something that doesn't work properly, you will not get to replace the bulb and then it just doesn't get anywhere" (translated, Roskilde Dagblad, 2011). This corresponds very well with what Claus states in his interview: "we just wanted to dissolve some of the hurdles that people might run into when they are going to buy LED light, which could turn into long term barriers".[5]

Concluding remarks: What may this imply for a wider scale?

As can be seen from this paper and related studies, domestic light is more than a matter of energy and energy efficiency. Energy is important, but it is what light facilitates and supports that make sense in an everyday life perspective. Purely focusing on technological optimization and making the product more energy efficient does not seem to be enough. In fact, the halo-

5. The project received a small funding from Munlsøgårds own foundation Grøn Fond (Translated: Green Foundation). Paolo had prior to applying for support at 'Grøn Fond' tried to apply for money for a bigger and more wide ranging project through Agenda 21 means at Roskilde Municipality, but the application was rejected.

gen spot and the properties of the spot-technology may even have resulted in a lighting pattern that consumes as much (or more) energy as lighting patterns involving fewer but bigger incandescent light bulbs, or CFL tubes, as in general has been the case prior to the spot. So it seems to be important to look at the practices in which lighting engage. But it is also important to look into the performance of these practices and how and why they vary.

The interviewed residents from Munksøgård seem to perform practices involving lighting somewhat different from how it is performed in Stenløse Syd. Yet, having this difference in performance while still having some of the same connotations connected to light and homeliness, seems to support the idea that social practices is about social organization, but as something other and more than individuals making contracts while, at the same time, not being dependent on a holistic notion of cultural or societal totality either (Warde 2005). This 'something else' that makes groups within the same society and same overall cultural alikeness's differ from each other in terms of utilizing products, and associate different meanings to this utilization is interesting to look further into. Equal access to information about 'making energy efficient choice' is obviously not resulting in equal 'compliance', so what is determining for the Munksøgård group not only to be more aware (although in varying levels), but also actually buy and include more efficient lighting technologies? It seems evident that the aspect of community and social learning within the community play a certain role. However, what implications do this localness and sharing information have for the succeeding with implanting efficient technology in society at large, where such localness is not always present or accentuated?

A number of lessons from the Munksøgård case may be brought forth that may not depend entirely on people sharing information within a certain geographical delimitation.

Firstly, the LED showroom seems to have brought some attention to the LED as a light source, among the residents at Munksøgård. At least it has made the residents aware of the light source and that there is a range of alternatives within this kind of light source. However, most of the residents admit to not having made use of the showroom in the actual purchasing situation, and this might have to do with the showrooms inability to keep up with the pace of the LED market. The showroom is based entirely on voluntary engagement from the shop keeper and the residents involved, and the products in the showroom become outdated fast. Looking further into how showrooms of this sort could be utilized to bring in the contextual matters of employing LED light could be interesting.

Secondly and perhaps more importantly for this paper, it is interesting to notice the degree of knowledge and explicit language that seem present and utilized in Munksøgård, when it comes to lighting technologies and their relation to energy and environmentally related issues. Most of the residents see excess lighting as a waste in terms of resources, where the residents in Stenløse Syd seem to associate excess lighting with a waste of money, if anything. The aspect of including thoughts about resources in performing various practices may be due to the Munksøgård residents taking part of maintenance work around the community, which is mostly about keeping the flow of resources to a minimum, reusing and recycling as much as they see possible. Although it may not be possible to engage the entire society in such programmes, some aspects of this may be worth to think further. But it does suggest that it may not make sense to do legislation that somewhat narrowly focuses on technological efficiency, if a day to day understanding of how resources engage with and facilitates our practices that involves using technology seems influential in terms of actually utilizing less energy intensive resources. This issue is also touched upon by Evans et al (2012), who find that, in terms of eating practices, focusing on single elements such as red meat, organic food etc. has not had the expected effect in trying to alter these practices. Evans et al (2012) explicate that if a practice based approach is utilized to understand the effectiveness of policies, it implies that interventions that focus on isolated behaviours are unlikely to succeed, as practices are configured through the intersection of multiple components and activities. In prolongation to this they actually give the example of domestic light in the UK, where promoting energy efficient light bulbs have been successful, and the replacements have in fact brought direct savings with it, the total energy use for domestic light has not decreased equally, as the savings made from the direct substitution have been offset by stronger and more persistent trends, such as emerging tastes for ambient low-lighting and net increase in number of bulbs that homes have in each room (in Europe in general). This is quite interesting to relate to the findings from this paper where the ambient light facilitated by spots seems to be a dominant trend, seemingly resulting in a larger number of light sources.

As Evans et al (2012) concludes, it is not easy to predict the effects of an initiative, particularly not when taking on a practice-based approach that directs focus to being about multiplicity and interconnectedness. However they also suggest that programmatic kinds of policies that are specific to sets of interrelated practices may finally result in change. Based on the findings from this paper, it seems fair to support that aspects of interconnectedness seem to matter. For one, the interconnectedness expressed through engaging with various resource-related aspects of everyday life seem to matter for the utilization of less energy intensive light sources at Munksøgård. Or put the other way around; the fairly detached relationship that many of the Stenløse Syd residents seem to have to the more energy efficient light sources may matter in terms of not implementing these kinds of light sources to an equal degree. Second, having a forum for sharing integrative conventions, whether it is through discussing with the neighbours over communal dinner, or whether it is through an experimental showroom focusing on the more contextual aspects of energy and light, seems to be of essence when trying to alter energy intensive practices.

In following up on Munksøgård as a community of practice and perhaps taking it a step further, it could be interesting to look at Munksøgård through the lens of Social Innovation as part of Strategic Niche Management as Seyfang and Haxeltine (2012) are doing when analysing UK Transition Towns, to see what treating Munksøgård as a niche that may challenge the existing regimes facilitating energy consumption would imply. Seyfang and Haxeltine (2012) point to second order learning being very important for changing current systems, as second order learning implies that people start to question the assumptions and constraints of existing regime systems (Kemp et al, 1998). This is in fact what some of the Munksøgård seem to do when, for instance Mick wants to

live in place where people do not dispose of electronic products through household waste, and Bolette wants to feel like she and her neighbours are being a bit revolutionary. Further, the fact that Munksøgård has an alternative waste handling system, including a recycling and even re-using system supports that the residents are actually questioning what could be termed as the existing energy and waste regimes, and that they are trying to doing something about it. And as the Munksøgård residents generally seem to utilize more energy efficient lighting products, the idea of looking into how social innovations in this sense work could be interesting when trying to opt for energy efficient practices.

References

Bille, M., Sørensen, T. (2007). An Anthropology of Luminosity: The Agency of Light. Journal of Material Culture, Vol. 12, p. 263–284.

Bladh, M, Krantz, H. (2008): Towards a bright future? Household use of electric lighting, a micro-level study. Energy Policy 36, p. 3521–3530.

EU Green Paper: Lighting the Future, 2011: http://ec.europa.eu/information_society/digital-agenda/actions/ssl-consultation/docs/com_2011_0889_ssl_green_paper_en.pdf.

Evans, D., McMeekin, A, Southerton, D.(2012). Sustainable Consumption, Behaviour Change Policies and

Theories of Practice. COLLeGIUM: Studies across Disciplines in the Humanities and Social Sciences 12 (Habits of Consumption, Warde, A, Sourtherton, D. (eds).

Garnert, J. (1994). Seize the Day. Ethnological perspectives on Light and Darkness. Ethnologia Scandinavica, vol. 24.

Gram-Hanssen, K. (2005). Husholdningers elforbrug – hvem bruger hvor meget, til hvad og hvorfor? SBi 2005:12.

Gram-Hanssen, K, (2010). 'Residential heat comfort practices: understanding users'. Building Research and Information, Vol 38 (2), p. 175–186.

Gram-Hanssen, K (2011) Understanding change and continuity in residential energy consumption. In: Journal of Consumer Culture, Vol. 11, 1, 03, p. 61–78.

Jensen, C., Gram-Hanssen, K., Remmen, A. (2012) Images of Light – Is 'phasing out' the solution. Paper #219 for the 3rd International Conference on Sustainability Transitions – Navigating theories and Challenging Realities. http://www.ist2012.dk/index.php/IST/IST2012/about/editorialPolicies#custom-2.

Kemp, R., Schot J, Hoogma, R., 1998. "Regime shifts to sustainability through processes of niche formation: the approach of strategic niche management." Technology Analysis and Strategic Management vol. 10, p. 175–196.

Munksøgård homepage: http://www.munksoegaard.dk/index_en.html (04.01.13).

Reckwitz, A. (2002). Toward a Theory of Social Practices: A Development in Culturalist Theorizing. European Journal of Social Theory, Vol. 5, No. 2, 2002, p. 243–263.

Roskilde Dagblad (2011). Section 2, Monday the 21st of March.

Røpke, I., (2009). Theories of practice – New inspiration for ecological economic studies on consumption. Ecological Economics, Vol 68(10), p. 2490–2497.

Seyfang, G, Haxeltine, A. (2012). Growing grassroot innovations: exploring the role of community-based initiatives in governing sustainable energy transitions. Environment and Planning C: Government and Policy. Vol 30, p. 381–400.

Shove, E. (2010). Beyond the ABC: climate change policy and theories of social change. Journal of Environment and Planning, Vol. 42, p. 1273–1285.

Shove, E. Pantzar, M., Watson, M. (2012). The Dynamics of Social Practice. Everyday Life and how it changes. Sage Publications.

Warde, A. (2005). Consumption and Theories of Practice. Journal of Consumer Culture, Vol. 5, p. 131–153.

Wenger. E. (2000). Communities of Practice and Social Learning Systems. Organization Articles. Vol. 7(2), p. 225–246.

Wilhite, H., Nakagami, H., Masuda, T., Yamaga, Y., Haneda, H. (1996). A cross-cultural analysis of household energy use behaviour in Japan and Norway. Energy Policy, Vol. 24, p. 795–803.

Glossary

CFL	compact fluorescent light
LED	Light Emitting Diode
DEST	Danish Energy Savings Trust

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