Beyond 'Behaviour': the Institutionalisation of Practice and the Case of Energy-efficient Lighting in Denmark

Abstract

In contrast with approaches which focus on behaviour relating to purchasing decisions and attitudes of consumers, research on social practices emphasises the analysis of what people routinely do and the elements of practice underpinning institutionalisation of collective conventions. The paper contributes to this growing stream of literature by investigating social practices relevant to energy-efficient lighting in Denmark. The paper reports on data collected from 'ethnographic interviews' conducted in 16 Danish households. The paper suggests that drawing on insights from institutional theory could enrich our understanding of social practices, for example in relation to the emergence and embedding of new practices and shedding of 'old' ones. As well as highlighting the elements of practice previously identified as integral to collective conventions and connections among different domains of practice, the paper recognises the importance of phenomena usually examined in work emphasising institutional analysis. It suggests that policy interventions need to recognise various kinds of institutional rules and processes which confer legitimacy to emerging practices, to facilitate their sedimentation, and contribute to realising environmentally sustainable systems and societies.

1. Introduction

Policies for transforming energy systems are often based on the assumption that information provision for consumers, accompanied by technological innovation will be enough to elicit desired changes in behaviour to promote sustainable consumption. This assumption is built into EU directives regulating energy-using products, including light bulbs. However, studies show that the anticipated uptake of energy-efficient lighting products as well as the anticipated reduction in energy consumption from light is not easily realised, if at all (European Commission, 2011, Evans et al, 2012, Wallenborn et al, 2009).

The paper considers the merits of recent claims that policy makers should focus their attention on consumption practices and culture rather than consumer behaviour or sustainability-related products and technologies (Spurling et al, 2013, Shove, 2014; Shove and Walker, 2014). It concerns the argument that socially shared practices could and should be the unit of intervention adopted by policy-makers. Thus, it is misguided policy merely to provide information intended to inform the choice 'act' and to treat sustainable consumption as a matter of the aggregated attitudes and behaviours of individuals. However, a fundamental limitation of social practice approaches concerns a lack of clear recommendations which can effectively inform national energy or climate

change policy interventions[1]. This is compounded by poor explication of the processes by which changing practices are bound up with changing institutions, a term which in contemporary parlance is captured by references to the adoption and embedding of a 'new normal' regarding sustainable behaviour. These twin challenges are at the core of the paper, which presents new interview data and case studies of the institutionalisation of lighting-related practices in Denmark.

The structure of the paper is as follows. Section 2 reviews literature on social practice approaches to (un)sustainable consumption. This is contrasted with views that emphasise consumption as attitudes inherent in episodes of choice or behaviour. The section brings out institutional aspects of social practices, which perhaps have remained implicit in research thus far. Section 3 outlines the research design and methods employed by the study, in which data collection and data analysis are based on the conduct of ethnographic interviews and case studies. Section 4 presents the findings of the study, the implications of which are considered in Section 5, the conclusion.

2. Literature review

The paper explores and extends the discourse-institutional aspect of social practice perspectives of sustainable consumption. The discourse-institutional view adopted here is informed by recent contributions to neo-institutional sociology and organisation

---

[1] We acknowledge that literature on these topics is emerging, see: Spurling et al 2012; Shove, 2014; and Vihalemm et al 2016.

studies, which are concerned to address issues of ephemerality and change, as well as stability of social phenomena (Dacin et al, 2002). Unlike 'older' institutional approaches recent developments draw attention to the 'work' that is done to create and embed new regularities in social life, and problems of de-institutionalisation and failed institutionalisation (Lawrence et al, 2011). Processes and carriers of both nascent and erstwhile institutions, including language, also come to the fore (Zucker, 1987). The creation and embedding of a 'new normal' in specific fields will have to contend or work with deep-seated cultural values, normative expectations or obligations and formal regulations and legislation, as well as social practices and parallel discourses in other fields of life (Scott, 2008).

Social practice perspectives of consumption emerged partly to counter approaches which have focused on the isolated choices, behaviour and preferences of the individual consumer, or technical fixes in which innovation can solve the problem of unsustainable consumption, e.g. electric cars, energy-efficient light bulbs, etc. Behaviour(s), along with the attitudes and values which are argued to shape them have been explained by researchers employing rational choice models, in which the dominant view of human nature is *homo economicus* (Warde, 2005). In policy circles there has been a preoccupation with how to 'nudge' the 'consumer' to make the 'right' (i.e. sustainable) purchasing decisions or adopt certain behaviours, such as to recycle. In contrast,

proponents of social practice approaches see 'behaviours' as the 'tip of the iceberg' (Spurling et al, 2013), the performance part of practices. Below the 'surface', practices involve collective conventions which are deeply embedded through society, recurrent and implicated in three elements of social practice (Author 2, 2013). These elements are identified as materiality; knowledge; and meaning (Shove et al, 2012). According to theories of social practice it is necessary to change these elements or the practices *in toto* to accomplish desired systemic transitions or deeper/broader societal transformation. Critically, however, it is necessary to appreciate connections among practices in systems of practice. Shove et al (2012), Watson (2012), and Spurling et al (2013) argue that researching practice should involve examining relations between co-existing systems rather than merely representing systems transition as a single evolutionary process. Thus it is important to understand relations between practices (Kemmis et al, 2014), how systemic transitions come about, and how new practices become normal within such systems (Shove et al, 2015). Moreover, from a practice-theoretic view, 'systems' are understood variously as 'ecologies of practice' (Kemmis et al, 2014), 'infrastructures' (Shove et al, 2015) and as composed of 'bundles of practice' (Watson, 2012).

Social practice theory counters views which emphasise production at the expense of consumption and puts centre stage the everyday reproduction of unsustainability. The

social conventions which are implicated with unsustainable practices are deeply institutionalised. Social practice approaches point to routines and rules and carriers of embedded cultural conventions and 'socially shared meanings' (Spurling et al, 2013: 9). The routinisation of practice is not only about the 'doing' of practices; what is said about practice may be of great relevance to the conveyance and (re)circulation of meaning which allows practices to endure and spread so that they become *conventional*. There is therefore a discursive aspect to practices and their institutionalisation.

Contributions to practice theory refer to 'institutions' and 'institutional arrangements' which influence the activities, timing of and connections among practices. For example, in relation to the domain of transportation and the practice of driving privately owned cars, one might consider embedded patterns of eating (the number and timing of meals each day), the school 'run' and office hours of work. Further, alternative 'problem framings' could emphasise the re-crafting of practice as entailing new industry or product standards, as well as social conventions and state/regulatory measures. These categories of interventions fit well with the kinds of phenomena typifying sociologically informed discourse and institutional analysis (Author 1, 2016; Schmidt, 2008; 2010). Researchers employing such views of social practices have not made explicit connections with institutional theory to complement their analysis (but see Kemmis et al, 2014). The paper therefore seeks to contribute to knowledge by showing that

applying discourse-institutional and social practice perspectives in a complementary way can add further insight into the dynamics and potential reduction of (unsustainable) consumption.

There are several points of contact between institutional and practice-theoretic approaches, which could be developed. They include: (a) the routines and routinisation of individual and collective energy behaviour; (b) the nature of conformance to (newly) established rules and the implications of this for conferring legitimacy on actors who conform to such rules; (c) the carriers of institutions and practices; (d) the importance of aspects of language, symbolism and meaning for the production of institutions/social practices through culture; and (e) connections among focal practice domains or institutional fields.

2.1 Institutions, practice and discourse

The paper recognises that institutionalised rules are (re)produced, undone or supplanted through a number of 'carriers'. The embedding of these rules occurs with local habitualisation and more general sedimentation, though this diffusion may not represent a neat process of transfer or translation[2] across geographical or temporal contexts, according to the vagaries of local conditions, history and the codification and tacitness of knowledge.

---

[2] The reference to 'translation' as mobilization, transfer or circulation of elements draws on Shove (2012).

What makes rules 'stick' are dynamics which enable compliance with them: for formal, regulative institutional rules these involve coercion, for example legally enforceable sanctions. For normative rules the modes of compliance concerned are moral obligation or duty, pride or shame – a sense of what it is right to do in particular settings. For cultural-cognitive rules one can point to habit or taken for grantedness which removes conscious deliberation over what to do. Compliance with such rules however may only be 'surface level' if they are not considered legitimate. Carriers of institutions include: routines of and knowledge/skills for performing regularised activities; artefacts and other 'material' phenomena such as the body; relational networks; and symbols (Scott, 2003). This list broadly corresponds with the 'elements' of practice identified previously by practice theorists with the addition of relational networks which do not feature explicitly in their work (at least not in the representations found in Spurling et al, 2013 or Shove et al, 2012). An institutional approach to elements of practice thus emphasises extending the material dimension of institutional carriers beyond things or computer software. This recognises the embodiment of what we do (Wallenborn and Wilhite, 2014).

As neo-institutional and practice theoretical approaches already recognise, the symbolic meanings attached to what is done daily by individuals and collectivities with all kinds of 'material' are important to the carriage and persistence of institutions (Shove, 2003).

Further, aspects of rules and competences are acknowledged as an important element of practice. Shove et al (2012) emphasise the need to specify the manner in which both new 'know why' and 'know how' knowledge are generated, applied and become routinised. This draws attention to features of the relational networks which enable ideas and practices to travel (or not) in what particular ways and with what degree of local adaptation or standardisation across contexts.

The language aspect of institutions can be seen in the processes by which they are carried and become embedded in local and more distant spatial and temporal contexts. For example, in relation to heating and air-conditioning the ASHRAE and ISO standards referred to by Shove (2003) are influential texts, which objectify and 'translate' scientific knowledge about heating, cooling, building design and human physiology and comfort. The institutionalisation of these standards and consumption of these texts has sedimented geographically and over time and thus has assumed a normalcy among building designers in a number of countries which has made them seem unchallengeable. Thus we have the institutionalisation of normative rules governing environmentally unfriendly building design based on certain expectations of thermal comfort and 'scientific' control of heating and cooling in buildings.

Changes in one practice can result in changes in another practice due to what Shove et al (2012) refer to as the circulation of elements. Such circulation refers to interactions among discourses, carriers and processes of institutionalisation, which are accomplished through relational networking, material phenomena, translation, text and discursive practice. These will produce changes in institutional rules and vice versa. The paper will explore these dynamics further in section 4.

3. Methods

Examining different types of household setting enables the exploration of salient aspects of energy-efficient consumption, in answering the following research questions:

1. What social practices involving lighting may be identified across local settings?
2. What are the implications of local practices for (de)institutionalising patterns of energy consumption?

Ethnographic interviews with members of 16 households were conducted in two Danish municipalities, representing two critical case studies (Yin, 2003). Eight households were in a low-energy house setting in Stenløse Syd, and eight were in an ecological co-housing community called Munksøgård (in the municipality of Roskilde).

3.1 Site selection

Stenløse Syd

The reason for exploring how light is used in *low-energy houses* is that residents in this kind of household may be able to relate to and talk about energy consumption, as the energy consumption is made 'visible' through various meters and information schemes (Hargreaves et al 2010). The households have smart meters installed that can give an overview of energy consumption (also called 'housekeepers'). From a policy perspective, these residents would be considered a target group that 'understands' and 'chooses' energy efficiency (Strengers, 2013).

However, in Stenløse Syd none of the residents chose to live in the area primarily due to the low-energy aspect and only a few of them seemed to be more aware of their daily electricity use, in spite of the smart meters installed in their homes. This case therefore uncovers some patterns that apply to more conventional households as well, thus feeding into a discussion of how Danish households generally interact and live with lighting. The case has a two-fold purpose, as it simultaneously critically questions the policy emphasis put primarily on information and awareness.

Munksøgård

The reason for unfolding how light is used in an ecological co-housing community is firstly to explore how similar aspects of practices involving lighting may be found across two different settings. Secondly, it is to explore whether a co-housing set up with broader focus on energy efficiency *as well as* social and environmental responsibility

may actually embrace different sets of institutional rules that may facilitate less energy-intensive lighting patterns. The intention here is thus to explore how and whether adjacent practices influence each other, potentially helped by *sharing* conventions and meanings in a local context through social learning (Wenger 1999), through emerging discursive practices and through translations.

Households were recruited as follows. At Munksøgård, an invitation to participate in interviews was posted on the notice-board in the local supermarket and café. Further, one of the co-authors asked a resident to send out a written invitation to the email-list of all of the residents at the site. Finally the same co-author went to a communal dinner, at which this same resident helped the researcher to publicise the project to other residents. 8 households were chosen to represent as wide a range of people as possible, including young couples, a family, a single person, elderly people, and in this mix both tenants and homeowners were represented. For the Stenløse Syd case, 8 households were selected based on a simultaneous engagement of a co-author in a parallel project and a similar case study of practices related to heat-pumps and heat consumption, and these households were also a mix of singles, families, tenants and homeowners.

3.2 Data collection and analysis

Acknowledging that it is difficult to be explicit about something that is regarded as the 'normal order of things' (Nicolini, 2012) such as living with and using light, it is

appropriate to draw on empathetic approaches such as ethnography. As ethnography is about learning from people (Spradley, 1979) it is important to remember that since practices are about a normal order of things, carriers of practices – such as people – are potentially good informants (Hitchings, 2012), if they are helped to talk about practices as well as to perform them. As carriers of practices are recruited to practices through learning and partaking in practice (Shove et al 2012), the ethnographer needs to employ the same process of going beyond what is seen and heard to infer what people *know*.

It is not enough to learn about the sayings and meanings related to the histories (King, 1994) and socio-material lifeworlds (Kvale, 1996) of practice carriers, even if understood ethnographically. The embodied, untold and implicit aspects of practice need to be uncovered as well, in order to determine the dynamics and relations between all elements of practice. Accordingly, Spradley (1979) identifies *ethnographic questions* that may help the interviewer learn from the interviewee through uncovering both sayings and particular doings. Descriptive questions, hereunder 'grand tour' and 'mini tour' questions (Spradley, 1979) allow the interviewer to get an idea of the interviewee's life world. 'Structural questions' allow the interviewer to get a more detailed insight into how the interviewee organises her knowledge. While descriptive questions can help the interviewer to understand how practices are (discursively) described and how they are 'laid out', structural questions are useful when trying to

specifically identify elements of competence. Lastly, 'contrast questions' can be used to identify what the practice-carrier means, without directly asking for meaning. When asking contrast questions, the interviewer instead tries to uncover what the activities that the interviewee talks about *do not imply*, so that the interviewer can get an idea of what is *not* part of the practice.

Based on the categorisation of questions presented above, a number of questions were prepared prior to the interviews as part of a semi-structured ethnographic interview guide (Spradley 1979, Kvale 1996). In analysing practices in which lighting plays a role, it is useful to treat the lighting products and systems in the home as the material element of practices or at least as a material arrangement (Schatzki, 2002) that indeed co-structure and co-produce practices. The interview guide was therefore comprised of a number of descriptive questions about the interviewees' general use of lighting (grand tour questions), followed by a number of mini tours around every lamp or lighting arrangement in the interviewee's home. During the mini-tours, a number of structural questions as well as contrast questions were posed, to pin down the specific competences and meanings related to the lighting arrangement. This process made it possible to open up a space for the embodied aspects of practice; when the interview is conducted 'at the scene', the interviewee is 'reminded' of the actual doings related to turning lights off and on, when light is used, why and for what occasions. All interviews

were audio-recorded and transcribed, then coded and allocated to themes after repeated reading (Coffey and Atkinson, 1996). The themes were informed by insights gained from reviewing literature on social practice and neo-institutional approaches. Themes were also identified in the notes of the log-books used to record observations from the 'tour'.

4. Results

Exploring consumption as a matter of social practices is as useful an approach as it is challenging. *Light* is not one practice, but part of (and an outcome of) many practices, which means that allowing practice to take centre stage presents an analytical challenge when focusing on lighting technology. It is however very useful to understand light as an outcome of multiple practices and what then 'happens' to the products (light) in the configuration of practices, as they mutually shape each other.

Practices such as cooking, cleaning, dining and showering are thus conceptually interesting to explore, in terms of the role that lighting plays in them. As would be expected, practices of cooking, cleaning, dining and entertaining are recognised across the household case study settings. Across the cases, practices such as cooking and showering are carried out much in the same way as people draw on the same competences, materials and meanings. The same applied to the practice of dining, when this is approached as an entity. Thus how food is prepared, how the table is set, and

what it means to gather around food to have a meal, are done or experienced similarly across the case study settings.

However, there are also differences between the case study settings in the role *light* plays in practices, which are interesting to explore further, in order to understand better what 'promotes' energy efficiency/sustainability. In Munksøgård, the residents generally use more energy-efficient bulbs, even though these differ significantly in quality and product characteristics from older less efficient incandescent light bulbs. In contrast incandescent bulbs are the preferred light source for the residents in Stenløse Syd.

Table 1 (below) gives examples of how light carries different meanings and competences in the two case study locations. Relatedly, certain institutionalised routines are and need to be developed in order to use certain lighting products competently. For instance the compact fluorescent light bulb (CFL) is deemed appropriate and in most cases even 'normal' in Munksøgård, because certain symbols and meanings are attached to being energy-efficient and sustainable in Munksøgård, that in effect mould the way lighting is carried out in these households. When asked about why she has a lot of CFL bulbs, one of the residents in Munksøgård stated:

"yes, that is something that we have insisted on… well, it is not something that people write about, but it is a general principle, I think… that it is a good thing… and we have a box for collecting the used ones, you know… so that is good… then they are recycled or something…" (All quotations are translated from the original Danish interview transcripts).

The above quotation implies that whilst there do not exist explicit formal rules about the deployment of energy-efficient light bulbs in the community per se, there is rather a socially ingrained belief or obligatory mode of compliance that come to take on a rule-like status therein. In other words, the residents at Munksøgård are 'caught' by certain meanings related to 'living sustainably' that 'trumps' other meanings, for instance related to what it means to perform an appropriate dinner-practice. In Munksøgård the colder light is, in most cases, made to appear 'warmer' by being wrapped in certain lampshades to appear 'cosy' and thus suitable in the living- and dining rooms. In Stenløse Syd, light bulbs that emit colder light are generally 'banished' to areas of the house where light is not used regularly. A resident from Stenløse states that his wife *"cannot stand the light from energy saving light bulbs (CFL), so we only have energy saving light bulbs where we don't use the light regularly… it is not very* comfortable *…".*

'Comfortably' is thus understood, talked about and 'lived' differently across the household settings, in terms of lighting.

[TABLE 1 ABOUT HERE]

The relationship between living, talking about and understanding, say comfort, or normality, can be exemplified further; for instance, the way the residents across the settings *talk* about energy-efficient light is notably different. In Stenløse, residents tend to associate utilising energy-efficient light bulbs with something that they felt they *should do*, but when it failed to meet their expectations in terms of quality, they went back to less efficient alternatives such as halogens and incandescent bulbs. As an example, one resident stated that she and her family should have installed LEDs but that she could not stand them. She stated:

"…you know when you live in a house like this [a low-energy house]*, then you have to try and think about it a bit, right, but they* [manufacturers] *have to make them better, you know, at least the ones we have tried…"*.

Thus, she, like a number of other Stenløse residents, refers to utilising energy-efficient bulbs as something *idealistic*, that they felt they had to try, but in many cases the energy-efficient bulbs were replaced or kept in spaces where no one would stay for a long period of time (children's rooms, storage etc.).

Energy-efficient light is *talked* about in a rather different way in Munksøgård. There, energy-efficient light bulbs such as CFLs are considered normal, but to some extent residents emphasise that, as if they know that it is not a conventional view. One resident stated that, in opposition to conventional wisdom, she thinks that CFLs go well with the iconic Danish lamp called 'PH lampen' (the PH lamp). As the PH lamp was designed in the early era of the incandescent light bulb, many feel that CFLs and LEDs, which cast a different light in terms of colour and colour rendering, do not fit well in it. She stated:

"Well, I think it [the PH lamp] *is fantastic for CFLs… because of the way that it quite so spreads the light, in so many ways. I know that many people feel the opposite, but I think it is fantastic…"*

Another resident spoke about CFLs as a good quality light source in a way that seems almost insistent, when she is asked about high and poor quality light. She stated:

"Well, it [the CFL bulb] *has been discussed in so many ways…. But I do not think that it is a poor quality light source.. but for me, good light is when I don't have to put my nose in the book in order to be able to read (inferring that incandescent light is too dim)."*

At the same time she mentioned that she does not like the CFL tubes that are used in many houses and apartments in the southern part of Europe.

These examples seem to imply that in Munksøgård energy-efficient light bulbs are sought to be included in what is practically and culturally conceived as appropriate (and significant) light *constellations* and situations. To some extent this makes energy-efficient light normal, although not entirely habitualised, as it is recognised that being 'positive' about energy-efficient light bulbs and their qualities in Denmark is a rare phenomenon. Arguably, the discursive aspects of practising everyday life situations in which light engages are rather different between the settings. This may suggest that some cultural-cognitive institutions regarding common beliefs about lighting, design and comfort have been translated in Munksøgård, which in turn 'translates' practices. Notably it is not the energy efficiency of the light *per se* that is important in Munksøgård. Rather it is being 'energy-efficient' that is realised through a complex of competences and meanings/symbols related to socially embodied ways of living sustainably. Being energy-efficient is governed by rules at Munksøgård which are implicated with certain discursive practices about utilising energy saving light bulbs, which in turn modify practices, such as dining and entertaining. Further symbols/meanings prevailing in Munksøgård are (re)produced through participation in practices promoting sustainable consumption. For instance, residents carry out several

21

practices of sharing, such as swapping furniture and eating together a few times a week. As practices are not hermetically sealed off from each other (Warde, 2005), several elements, particularly those of competences (e.g. how to reuse/mend/adapt things) and meanings (e.g. that reusing/mending/adapting things have value) can exchange between practices. This seems particularly evident in the way that daily life is carried out at Munksøgård, in terms of the role that 'sustainability' has in daily life. Therefore, using energy-efficient light bulbs in Munksøgård cannot be regarded as a (rational) choice, as much as it is an outcome of carrying out multiple practices that constitute life at Munksøgård. Using energy-efficient light bulbs is thus part of a 'normality', which is different from the 'normal' of Stenløse Syd, where energy-efficient light is often associated with compromise and refraining from something of quality.

It is not only discursive practices and the circulation of elements carrying cultural-cognitive institutional rules through which redefinitions as well as even obstacles for redefining 'good light' can be seen. Regulative institutions, such as the European Commission's minimum requirements for energy using products and thus related national requirements, as well as material infrastructures, such as the electricity system and electricity outlets, play a large role in the way light is used in both settings. However, the two settings are 'practi*cing'* these institutions and infrastructures

differently in the way that they translate infrastructural and regulative framings, by transforming knowledge and experience into new sets of competences.

The European and national requirements for energy efficiency of light have resulted in the phasing out of incandescent light bulbs, and the introduction of new light sources such as halogen light spots and LEDs. The residents in both settings are facing this, but handling it differently, as presented further below. Across the settings, the material layouts of lamps are similarly composed. For instance, the number and position of the lamps are very similar across the two case settings. Almost all of the residents have ceiling lighting that is rarely used (and if used, it is often in the children's rooms), and several smaller lamps situated on floors, tables and in windows that are more frequently used. The smaller lamps are used for creating a certain atmosphere. These lighting 'constellations' are in part due to material infrastructures, such as the positioning of electrical outlets, and in part normative, as this constellation is simply considered 'normal' (as also recognised in Wilhite et al 1996). Notably since the turn of the millennium, a tendency to replace ceiling lamps with several lighting *spots* has emerged – particularly in the kitchen, the hallway and in some cases the bathroom. That tendency is detectable across both sites and is a good example of: 1) how the introduction of new technologies not only shape practices, but are also very much shaped by practices: and 2) how the adoption of new technology may for the user have unwanted side-effects,

which some users try to limit or circumvent in order to comply with prevailing or nascent institutions. Further the sites exemplify the inter-play between (e.g. regulative) institutional rules and material infrastructures. At one site, Stenløse Syd, the spots installed are primarily halogen spots, as the halogen spot light was introduced as an alternative to the incandescent light bulb, and is thus a result of changes within regulative institutions. Per unit, the halogen spot is more energy-efficient (watt/lumen) than the incandescent light bulb. But the tendency to install many spots, to create an ambient feel, is in some cases off-setting the energy savings. As an example, one of the residents in Stenløse started reflecting upon the number of spots that he and his family had installed when building their house, and was surprised to find that he had forty-seven 20-25 wattage spots installed in the kitchen and hallway area, and how much energy that constellation consumed compared to the light constellation they would have installed, had they used incandescent bulbs and fluorescent tubes.

There are several interesting aspects here. Firstly, it is interesting that entirely new lighting 'layouts' have come about with the halogen spot, that, in some cases, consume more energy than the ones they were to replace. Secondly, the resident noted that *"the spots came with the specific layout of the house and that the contractor had already proposed to position quite a few spots in the kitchen and the bathroom."* This example suggests that the halogen spots are becoming 'normalised' through an institutionalised

contracting system, much like the example of institutionalised building codes discussed in section 2. Interestingly, this 'normalisation' is in some cases compromised by innovative residents. In some cases, residents from Munksøgård have tried to install LED spots in existing lamps, but have experienced problems in making these systems work for them. This is due to the difference between the technology supporting the halogen spot (the transformer) and then the technology supporting the LED spot (a driver). The residents at Munksøgård were not entirely familiar with the technical reason for the halogen spot system not working if LED spots were installed, but through trial-and-error, they had figured out that the system would work if they left one halogen spot in the system and then switched the other spots to LED. In Stenløse there were fewer examples of residents having installed LEDs. In fact, many of them had tried LEDs but had gone back to halogen spots (due to the predominant emphasis on comfort related to warmer kinds of light). Further, there seem to be more examples of residents ascribing the responsibility of not utilising energy-efficient light bulbs to the lamp shades and material infrastructures; in Stenløse several of the residents mention that the size and shapes of their existing lamps, as well as the lamps fittings, 'are not made for energy saving light bulbs' and therefore they cannot have energy saving light bulbs. In Munksøgård, there are examples of the opposite response. Residents there said that energy saving light bulbs "*can be made to fit the lamps"* (not just the spots, but also the example of the PH lamp)*, and "that it doesn't matter if they fit perfectly*."

Based on the above examples, several dynamics, carriers of institutions and examples of institutionalisation (and non-institutionalisation) can be detected. For instance it is useful to look at the circulation of meaning as a *process of symbolic systems* in the case of Munksøgård, e.g. the enrolment of meanings concerning certain ways of performing a practice as being 'more sustainable', in a process of (incremental) change. The examples further show that meanings travel along with materials as well as competences. One has to be able to competently 'do light' with a different type of technology and a different set of meanings. One mundane, yet interesting, example of the ways in which changes in competences and meanings related to light was addressed, is exemplified by a young couple residing in Munskøgård, as they had figured out how to wrap the fluorescent light bulb in a yellowish lampshade, so that the light appears to be warmer than it would do otherwise.

Meanings and symbols circulate within and between practices of dining, cooking (where lighting plays an important role) and practices of sharing. The residents in Munksøgård partake in explicit sharing and learning processes, where they help each other to carry out less resource intensive versions of practices that in the same way innovate and adapt practice. In particular the residents of Munksøgård take part in learning processes in which configurations of practice are contested, negotiated and transformed, where tacit knowledge – or in practice terms 'embodied competences' –

play a significant role in embodying change. For instance, in Munksøgård, some of the residents provide a small 'show room' for other residents to come and see as well as test new light sources. Further some of them collaborated to refurbish one of the common rooms with new light sources. As the common room provides space for shared eating and partying, meanings and competences related to how to perform dining 'appropriately' were drawn upon, and sometimes contested. These findings suggest that for institutions to take hold/exist, they need to be incorporated in practice. In other words, practices produce institutions that in turn institutionalise practices, clearly affirming the duality of structure (Giddens 1984). In the case of Munksøgård, symbolic systems may carry discursive institutions relating to 'community living' or 'sustainable living', and thus may provide or induce certain ingrained beliefs of feelings of obligation. But this seems to happen because the institution of 'community living' is carried out in several aspects of the residents' daily life and thus the practices that constitute daily life. The institutionalisation of 'living sustainably' thus seems to happen through several processes of translation, where practices are (re)-negotiated. Picking up on how the Munksøgård residents collectively seem to be redefining what is 'cosy' in order to include energy-efficient light bulbs, this redefinition is not only related to meanings or symbols, but to a large extent also related to developing competences that allows for colder light to become appropriate. These competences are developed through trial-and-error (in developing routines for evaluating) and demonstration

processes that to a large extent are material and *relational*. Being 'environmentally oriented' is thus not an intrinsic 'value', but certainly something that is (re)produced through 'partaking' in several practices. Institutions for 'living sustainably' thus have to be constituted in practices and carried by practices, and policy and other interventions for developing institutions would have to target practices and all elements of practice (material, meaning and competence), and not merely the material (technological optimisation), formal rules (emphasising legislation and regulations), norms, and meanings (a value based approach). The implications of the study for research and for policies to transform institutionalised unsustainable practices are discussed in the following, concluding, section.

5. Conclusion

The paper shows that our understanding of (un)sustainable consumption is ill-served by a focus on instances of behaviour or purchasing decisions. Moreover, it suggests that analysis remains somewhat incomplete if researchers adopt approaches which direct attention to identifying and analysing the performance of individual practices or the practices of individuals. Fundamentally, the consumption (e.g. of light) might more informatively be viewed as a form of service consumption that can only be understood *in relation* to the social practices of which they are part (Shove, 2012) and as a result of relations between practices (Kemmis et al, 2014).

The paper shows that enrolling new lighting technologies entails innovation in each element of practice, and that the innovation happens due to the *interaction with adjacent practices*. This interaction is interesting to unfold. In Shove et al (2012), the interaction between practices is explained as a circulation of elements of practice, although the precise nature of the circulation process is not transparently addressed. The paper, therefore, sought to contribute to such elaboration by asserting the importance of *institutional carriers* (Scott, 2003) to the innovation of sustainability-related consumption practices and the stability of *un*sustainable ones.

When elements travel, a certain kind of transmission or translation happens (Shove et al, 2012). Following Czarniawska and Joerges (1996) hybridised human/technology networks are the (socio-) material basis for complex translation devices – in other words, socio-material practices may offer themselves as translation devices. Practices are only stable until they are not. The Munksøgård case study provides a good example of such a translation, or frame transformation; arguably the practice alignment that seems to have occurred in Munksøgård is due to a general reframing of what has been construed as problematic (unsustainable) living, which implicates several practices. These translations have come about due to a redefinition of complex relations between elements of practice as well as relations between practices. This implies, that although people are often put forward as carriers of practice (e.g. Shove et al, 2012) artefacts,

rules and meanings can be seen as manifestations of practices as much as people can be seen as carriers.

The paper illustrates how lighting products, tightly weaved in attendant competences and meanings, which may be transferred to (and from) other practices, may evolve into particular lighting 'constellations' Here, it was shown that (networks of) materiality that travel across several practices are implicated with symbolic as well as relational systems (between individual and collective actors) that link together the practices in question. These systems, which also act as conduits for performance-related routines, may enable and/or inhibit innovation in elements of practice possibly in different directions contemporaneously. In the situations where energy-efficient light is deemed 'appropriate' in carrying out practices such as dining and cooking, certain symbolic systems (Scott, 2003) are at play, which cannot be captured by addressing the dynamics of each practice in itself.

The case studies above exemplify how different institutional carriers implicated with dynamics of compliance (Scott, 2008) inhere with practice. Specifically, beliefs and habits are knitted together in effectively performing a certain practice: for instance, dining. These aspects seem manifest in and through the configuration of elements of practices that carries these dynamics within practices. These dynamics do however also

manifest themselves across practices, through relational networks which circulate elements of practice.

The particular nature of the sites investigated does limit the general applicability of the paper, their being located in two small areas within Denmark, which itself is a country with its own distinct socio-cultural, economic and political make-up. Moreover the method employed, based on ethnography, does not lend itself to easy 'scientific' replication. The contribution of the paper, which is to bring insights from neo-institutional analysis to the service of practice theoretic approaches to sustainable consumption, needs to be appreciated with these limitations in mind.

Having said this, in terms of policy implications, the paper suggests that greater attention should be paid to linkages between discourse institutions, practices as well as elements of practices, surface-level 'behaviours' and what policy makers and others can do to affect configurations thereof. Policy-makers need to be aware that interventions may (need to) impact on multiple – not isolated - practice domains and not merely to try to 'nudge' individual consumption decisions. Moreover, changes to 'regulative' institutional measures will be variously translated in different settings so that the effects of policy implementation are not uniformly experienced. In addition, policy makers should appreciate the activities of diverse actors (including themselves) in framing ideas

about and possibilities for (de)institutionalising (un)sustainable practices. These various actors engage in discursive and institutional work in different ways, with varying influence and with varying access to resources to support their activities, which impact on the circulation of meanings (e.g. of what it is to consume sustainably) and knowledge of how to do so and with what technologies/artefacts. Policy makers may consider support for experimental settings, which may be capable of demonstrating and symbolising more sustainable practice, going further than the familiar form of formally institutionalised support (e.g. tax incentives and favourable legislation) for purchasing energy-efficient artefacts (e.g. light bulbs and lamps). Working with intermediary or anchor organisations they might better support networks of translation/translators which may institutionalise sustainable discourses in new settings, whilst legitimating sustainable living and at the same time providing opportunities for social learning to diffuse competences connected with hitherto unfamiliar practice(s). In parallel, future research should investigate fundamental questions, such as: (a) who is involved and what happens when a practice is reconfigured in particular settings? (b) what makes elements of practice disconnect and reconnect? and (c) how do these elements travel (Shove et al, 2012)? The paper has shown that institutional analysis may help to shed light on such questions, within an inter-disciplinary approach to understanding consumer cultures and the potential for collective action. Thus it may further enrich research on (un)sustainable practices seeking to inform policy and other interventions

aiming to tackle cultures of unsustainable consumption, and embed more sustainable living.

Acknowledgments

[hidden to facilitate anonymous review]

References

Author 1 (2016)

Author 2 (2013)

Author 2 (2014)

Coffey A, Atkinson P (1996) *Making Sense of Qualitative Data: Complementary Research Strategies*. Thousand Oaks, CA: Sage.

Czarniawska B, Joerges B (1996) Travels of ideas. In: Czarniawska, B., Sevón, G. (Eds.) *Translating Organizational Change.* Berlin: de Gruyter, pp.13-48.

Dacin M T, Goodstein J, Scott W R (2002) Institutional Theory and Institutional Change: Introduction to the Special Research Forum. *Academy of Management Journal* 45(1): 45–54.

European Commission (2011) Green Paper: Lighting the Future Accelerating the deployment of innovative lighting technologies. Available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0889:FIN:en:PDF (accessed 21.03.16).

Evans D, McMeekin A, Southerton D (2012) Sustainable Consumption, Behaviour Change Policies and Theories of Practice. Helsinki University. COLLeGIUM: Studies across Disciplines in the Humanities and Social Sciences 12. Available at: http://hdl.handle.net/10138/34226 (accessed 21.03.16).

Giddens, A. (1984) The Constitution of Society. Cambridge. Polity Press.

Gram-Hanssen K (2011) Understanding change and continuity in residential energy consumption. *Journal of Consumer Culture* 11(1): 61-78.

Hargreaves T, Nye M, Burgess J (2010) Making energy visible: A qualitative field study of how householders interact with feedback from smart energy monitors. *Energy Policy* 38(10): 6111-6119.

Hitchings R (2012) People can talk about their practices. *Area* 44(1): 61–67.

Kemmis S, Wilkinson J, Edwards-Groves C, et al (2014) *Changing Practices, Changing Education* Heidelberg: Springer.

King N (1994) The Qualitative Research Interview. In: Cassell, C.M., Symon, G. (Eds.) *Qualitative Methods in Organizational Research: A Practical Guide.* London: Sage, pp.14-36.

Kvale S (1996) *Interviews: an Introduction to Qualitative Research Interviewing*. London: Sage.

Latour B (1993) *We have Never been Modern* (Trans. C. Porter). Cambridge MA: Harvard University Press.

Lawrence T, Suddaby R, Leca B (2011) Institutional Work: Refocusing Institutional Studies of Organization. *Journal of Management Inquiry* 20: 52-58.

Nicolini D (2012) *Practice Theory, Work, and Organization – an Introduction*. Oxford: Oxford University Press.

Schatzki T (2002) *The Site of the Social. A Philosophical Account of the Constitution of Social Life and Change.* Pennsylvania: Penn State Press.

Schmidt V (2008) Discursive Institutionalism: the Explanatory Power of Ideas and Discourse. *Annual Review of Political Science* 11: 303–326.

Schmidt V (2010) Taking ideas and discourse seriously: explaining change through discursive institutionalism as the fourth 'new institutionalism'. *European Political Science Review* 2(1): 1–25.

Scott WR (2003) Institutional Carriers: Reviewing Modes of Transporting Ideas over Time and Space and Considering their Consequences. *Industrial and Corporate Change* 12: 879–894.

Scott WR (2008) *Institutions and Organizations.* Thousand Oaks, CA: Sage.

Shove E (2003) *Comfort, Cleanliness and Convenience: the Social Organization of Normality*. Oxford: Berg.

Shove E (2014) Putting practice into policy: reconfiguring questions of consumption and climate change. *Contemporary Social Theory: Journal of the Academy of Social Sciences* 9(4): 415-429.

Shove E, Walker G (2014) What is energy for? Social practice and energy demand. *Theory Culture and Society* 31(5): 41-58.

Shove E, Pantzar M, Watson M (2012) *The Dynamics of Social Practice: Everyday Life and How it Changes.* London: Sage.

Shove E, Watson M, Spurling N (2015) Conceptualizing connections: energy demand, infrastructures and social practices. *European Journal of Social Theory* 18(3), 274–287.

Spradley J (1979) *The Ethnographic Interview*. Orlando: Harcourt Brace Jovanovich College Publishers.

Spurling N, McMeekin A, Shove E, et al (2013) *Interventions in practice: re-framing policy approaches to consumer behaviour*. Sustainable Practices Research Group Report, September.

Strengers Y (2013) Smart Energy Technologies in Everyday Life – Smart Utopia? Palgrave MacMillan, UK.

Vihalemm, T., Keller, M., and Kiisel, M., (2016) From Intervention to Social Change – A guide to Reshaping Everyday Practices. Routledge. USA.

Wallenborn G, Prignot N, Rousseau C, et al (2009) *Integration of Standards, Ecodesign and Users in energy-using products "ISEU"*. Final Report Phase 1. Brussels : Belgian Science Policy – 55 pp.

Wallenborn G, Wilhite H (2014) Rethinking embodied knowledge and household consumption. *Energy Research and Social Science* 1: 56-64.

Warde A (2005) Consumption and Theories of Practice. *Journal of Consumer Culture* 5(2): 131-153

Watson M (2012) How theories of practice can inform transition to a decarbonised transport system. *Journal of Transport Geography* 24: 488-496.

Wenger E (1999) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

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

Yin RK (2003) *Applications of Case Study Research*. (2nd edition). Applied social research methods series. Volume 34. Thousand Oaks, CA: Sage.

Zucker L (1987) Institutional Theories of Organization. *Annual Review of Sociology* 13: 443–464.

Table 1

Elements of practices as institutional carriers of lighting patterns

Element of practice/ Institutional carrier	Stenløse Syd Households	Munksøgård Households
Artefactual/material	Incandescent light bulbs, halogen spots, few Compact fluorescent light bulbs (CFLs). Many examples of a halogen spot-based lighting system.	CFLs, LEDs and halogen spots. Examples of LEDs installed instead of halogen spots in existing halogen-based lighting systems,
Competences: know-why and know-how	Incandescent light bulb referred to as 'normal' light. Turning lights on and off associated with creating practice appropriate light. Less associated with saving energy. LEDs rejected as an	CFL referred to as 'normal' light. Using light and *no* light to create certain practice appropriate atmospheres. Associated with energy saving. LEDs far from rejected, in

	appropriate alternative.	spite of unsuccessful experiences, due to competence-building.
Symbolic meanings	Incandescent light associated with 'warm' and 'comfortable' light. CFLs and LEDs generally associated with 'cold' and 'unpleasant' light. Energy efficiency primarily viewed as sacrificing quality, or as 'going an extra mile'.	CFLs associated with 'the' light source, having cosy, yellowish light (compared to LED light). Energy efficiency generally treated as something 'one would of course try to pursue'.
Relational networks	-	Examples of reproduction of practices (such as communal dining and local farming) translated to dwelling practices such as dining, Examples of social learning about energy-efficient light.

| Discursive elements | Descriptive terms (warm, cold, unpleasant) used about light. | Descriptive terms used, often in opposite ways than Stenløse Syd. |
| | Few references to technical terms | Technicality expressed. |

Source: Adapted from Author 2 (2014)