

Do homeowners use energy labels? A comparison between Denmark and Belgium[☆]

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Abstract

Energy labels on buildings are mandatory in Europe since 2006 with the application of the European directive 2002/91/CE on the energy performance of buildings. Therefore, it is relevant to analyse how the labels work in those countries that already have experiences with them. This article analyses how house owners have interpreted and used the knowledge from labels for the renovation of their house. The study is based on qualitative interviews with ten households having a Belgian volunteer energy assessment and ten households having the Danish mandatory energy label on their newly bought house. The article questions the faith in the rational enlightened actor, which is at the basis of the idea of labels. Using sociological theories on knowledge and everyday life in the interpretation of the qualitative material, it is shown that people relate to, interpret and question new knowledge rather than just take it in. Furthermore, it is also shown how the use of knowledge and advice interact with other priorities in everyday life. These results can help explain why people often do not carry through energy measures even though it might be economically advantageous to them. In the conclusion, it is also discussed how this type of knowledge might be used to improve energy labels.

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1. Introduction

Since the energy crisis in the 1970s and especially since the 1990s, when climate change and energy consumption became strongly linked, there has been a focus on energy savings in most Western European countries. In both Denmark and Belgium, households consume approximately one third of all the energy used. Therefore, there are good reasons to focus on households' energy consumption. For years, many political initiatives aiming at motivating households to save energy have been taken. Among these

are tax incentives and subsidies as well as information campaigns and labelling of electrical goods. In the European context, Denmark, one of the frontrunners, has had an active energy policy on savings, whereas Belgium has been more reluctant to promote energy savings (Bartiaux and Gram-Hanssen, 2005).

With regards to the Danish energy-saving policy, an energy labelling scheme for buildings has been an important mean. Since 1997, this scheme has been mandatory in Denmark and since the beginning of 2006 a similar scheme has been mandatory for all EU countries. It is the implementation of the Energy Performance of Buildings Directive (EPBD) that has generated the process. The directive is based on the Danish experience, among others. Concerning owner-occupied households, the idea in the Danish labelling scheme is that all houses shall be labelled before they are sold, so that the new owners can see the energy performances of the house they intend to buy. The

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labelling procedure also includes recommendations for improvements of the energy performances of the building. In Belgium, an experiment on energy assessments has been undertaken with selected volunteer households who then get labels on their house as well as advice for improvements. In this paper, we compare how the households receive, interpret and react to these labels and assessments. By doing so, we compare two different situations, the experimental and volunteer one in Belgium and the ongoing and compulsory one in Denmark.

Basically, the idea of energy labels on buildings follows the logic of other types of labels and consumer advices. It is a regulation based on the assumption that well-informed actors will behave rationally and, consequently, follow the recommendations if they can benefit from them in an economic way or in others. The idea of rational actors who follow their own interest and at the same time act in an ecologically rational way is well described in the theories of ecological modernisation (Boström, 2003; Spaargaren and van Vliet, 2000). The intention in this article is to go beyond the assumptions of enlightened and rational actors and, with inspiration from sociological theories, to describe the context and everyday life of the house owners in the situation where they receive the energy labels. By doing this, we might explain what otherwise seems a paradox. In Denmark, research on the labels show that there are a huge amount of investments in energy savings that are not carried through, although the payback time is low (Wittchen, 2004). From a rational actor's perspective, this leads to the conclusion that there must be some barriers preventing people from behaving rationally, a conclusion that was also the first reaction of the Danish authorities (Jensen, 2004, 2005). As other researchers have also pointed out, the barrier model however is too limited to understand human behaviour (Guy and Shove, 2000) and we will, through analyses, show and describe other ways of understanding house owners' lack of action.

Firstly, we will describe the sociological theories that have inspired and enriched the analysis. Secondly, the method of the study is described in further details. Then follows the main part of the article which consists of one section on how the house owners perceive the knowledge they get from the labels and another section that establishes to what extent the house owners use and follow the advice. In the conclusion, we will sum up the insights and draw some conclusions regarding energy labels on buildings.

2. Theoretical background

The underlying question in this article is why do consumers question or neglect the plethora of information on energy sound practices even if the advice is customised for their dwelling? In helping answering this question, the article includes two main theoretical backgrounds. The first one relates to lifestyle and practices, the other one concerns the question of expert knowledge and how this may influence the practice of laypersons during their everyday life.

2.1. Lifestyle and energy consumption

The international literature contains a long line of research in lifestyle, everyday life and energy consumption (for international overviews, see Lutzenhiser, 1993; Wilhite et al., 2000). Many of these studies show how routines and technology structure energy consumption (Aune, 1997; Shove, 2003), while others focus on how culture influences the way energy is consumed (Gram-Hanssen, 2004; Wilhite et al., 1996). These studies thus have in common the fact that they move focus from energy consumption itself to those causes of energy consumption that are more important in people's everyday lives. For instance, Darby emphasises that carrying out energy efficiency measures is imbedded in how the family relates to home improvements and, by that, to considerations of comfort, fashion and convenience (Darby, 2006). People's practices are, to some extent, guided by what could be understood as action and reward: you carry through activities because you get something in return. This, however, should be understood in broad cultural terms, for instance, the reward may be a higher social status if renovating one's home. Accordingly some energy saving actions may be carried through because of rewards that have nothing at all to do with energy savings. For instance, the use of microwave ovens may be energy efficient as compared to ordinary ovens, however the reason for the spread of microwave ovens are not to be found in energy efficiency but in convenience, fashion, desire for new things, etc. (Shove and Hand, 2005).

Other more quantitative studies investigate correlations between socio-economic background variables and the level of energy consumption (e.g. Bartiaux and Gram-Hanssen, 2005; Gladhart et al., 1986). In these studies, it is demonstrated that energy consumption is dependent on factors such as the number of persons living in the household, at what stage of their life cycle the inhabitants are, the type and size of the house and the household income. Background information are thus an important factor, though they can only describe approximately one third of the variation in households' energy consumption, whereas the rest must be explained by other factors, for e.g., by values and knowledge (Gram-Hanssen et al., 2004).

The ethical consumer is well established within many fields of consumption (Harrison et al., 2005), whereas for energy consumption ethic is primarily related to the question of green electricity, which is, from a consumer's point of view, "a confusing minefield of information" (Brown, 2005). The reason that ethics is so detached from energy can be found in that ethics is about feelings and sensation for other people or animals (Kemp, 1991) and even though the environmental consequences of energy production may be harmful to both humans and other species, this may appear to be in a very distant future and in a less tangible form. To appreciate the harmful consequences of consuming energy requires abstract and rational considerations, and these types of considerations are not of the same sort that engenders feelings and ethics.

Nevertheless, throughout the years authorities have initiated different types of information activities to persuade consumers to save energy. Energy labels may be viewed in line with this.

2.2. Knowledge transfer and practice

The second line of theory in this article relates to different types of knowledge and transfer of knowledge. Questions of expert knowledge are dealt with by Giddens (1990) in his analysis of the consequences of modernity. Living in a modern society unavoidably means that one has to rely on, for example, technical infrastructures which the individual has no chance of understanding. Hence one has to trust the experts and systems that are responsible for the construction and maintenance of the infrastructure. This means that the relation between laypersons and experts or expert systems is very relevant.

Furthermore, it is relevant to stress that contemporary theorists on science emphasise that scientific knowledge is more a social construction than a set of objective facts (Latour, 1987). Indeed, since the 18th century (the Enlightenment century), science and technology aim at replacing religious beliefs and tradition by a faith in Reason and their project is “to rationalise human life”: by invoking the universality of rationality,¹ technical experts conceal the issues of conflicting rationalities and of struggling for socially imposing their own rationality (Bonny, 2004).

Acknowledging that scientific knowledge is a social construction also implies that the different opinions concerning risk, science and technology that often occur between scientists and laypersons may not simply be interpreted as showing that the laypersons would not be sufficiently informed (Beck, 1992). On the contrary, it is important to notice that people do not simply possess scientific knowledge or not: they can also reflect upon the type and content of that knowledge and this relates to the way they see themselves in relation to science. For instance, people can ignore science and have different types of discourse, like “I am not interested”, “I am not able to understand” or “it is not my job” (Michael, 1996). Furthermore, one has to think the creation of risk, trust and knowledge in the public as something that is much more separated from science and created in everyday life (Lidskog, 1996).

In reality, people do not normally meet the scientists; what they meet are intermediaries, persons or institutions, which translate scientific knowledge to laypersons. Intermediaries include experts, social movements, business organisations, government and regulatory bodies (Lidskog, 1996). In our study, this notion is highly relevant, as the person who does the energy assessment is rather an

intermediary than a scientist. Furthermore, this also implies that the question of trust regarding the knowledge is more connected to the persons and bodies that perform and control the label than to science as such (Boström, 2003).

In the study on how households receive energy information and use it in their everyday life, one can distinguish different types of knowledge and this might be decisive for how we take in new knowledge and use it (Darby, 2006). In the same line of thought, and following the definitions of Giddens (1984) of discursive and practical consciousness, Hobson (2003) emphasises that new information is not simply added into the current lifestyle: it rather interacts with the existing knowledge and the practices changed after a programme are those that were brought from practical to discursive consciousness. Here, discursive consciousness includes the ideas and cognitions with which people have a reflective relation, whereas practical consciousness relates more to routinisation and things that are done without thinking how and why. This interaction of information is thus a necessary step and the new information must converge with other types of knowledge and it is the proper convergence and not the quantity of knowledge that determines its effectiveness in the change of practices (Goldblatt, 2003). This required consistency raises the importance of the social networks (either real, with familiar persons, or virtual, via the mass media). Social support is indeed necessary to make changes possible: “the demand for acknowledgement overcomes society. Everyone is on the lookout for approval, admiration, and love in the eyes of the others. (...) Without limitations. (...) Self-esteem is at the origin of every change” (Kaufmann, 2004), as identity management is associated with social support (Caradec and Martuccelli, 2004).

3. Method

The study is based on ten qualitative interviews in Belgium and ten in Denmark. For both Danish and Belgian interviews, we aimed at diversity not only concerning the technical characteristics of the housing but also regarding social criteria of the inhabitants. A common interview guide between the Danish and the Belgian teams has been worked out and the main points that have been asked for are the inclination to alter one's house, the influence of the assessment in that perspective and in which ways the energy advisors were considered experts. Interviews were recorded and transcribed and in their analysis, the interviewed are made anonymous and their names are changed. Ten interviews in each country is a rather small number especially when comparing countries. However, it should be stressed that these interviews are part of a broader empirical material whose analysis provides contextual knowledge on energy labels in Denmark (Jensen, 2005) and on energy-related practices and representations in Belgium (Bartiaux et al., 2006).

¹It is interesting to note that in Belgium, which follows France in this respect, all policies or communication on energy savings are called “rational use of energy”.

In Belgium, the participants are volunteers who have answered to an advertisement published either in a widespread and free newspaper or on the website of the energy-advising institution. Engineers from the Flemish Institute for Technological Research (Vito) have done the energy assessment for 40 households in the context of the SEREC research project,² and ten of these households were interviewed. It is neither a widespread nor a common procedure in Belgium, as there is no legal obligation yet for such an assessment in that country. In the Belgian case, the participants have been in contact with the energy advisors on several occasions: to take the preliminary contacts, for the assessment itself and even afterwards, for further questions. The results of several measurements taken by the engineer and processed by the energy-assessment software are a distribution of performances concerning the building envelope, heating installation, and sanitary hot water. The labels range from A+ to E, where the latter represents the lowest rank. Furthermore, the participants got energy-saving recommendations and investments calculations.

In Denmark, the interviewees were drawn from a random sample established among new house owners, all of them being holders of the mandatory energy labelling scheme. According to an act of 1996, all small buildings (single-family houses) in Denmark have to be energy-labelled every time they are sold. Specially trained energy consultants, educated as architects, engineers or building technicians, conduct the building assessments. These labels are issued in order to render the seller and the buyer aware of the building's energy rating and energy plan before agreeing on the sale. It is the seller's duty to requisition the label and to pay for it. Consequently, the new house owner does not meet the energy consultant. The actual energy-labelling scheme consists of three main ratings, concerning electricity, heat and water consumption; in addition to that, a rating for environmental impact in the form of a CO₂-emission figure is provided. Concerning heat, the actual figure of energy consumption per m² is referred to as either category A, B or C, and is further subdivided into five numbers, so that A1 represent the best category and C5 the worst. The label is followed by an energy plan that has sections for heat, electricity and water savings. Each of these plans consists of a list addressing different saving objects. For heating, this might be insulation, boiler, energy transmission system, hot-water tank and ventilation. In any case, the energy consultant can add the comment: "ought to be bettered". At the end of each plan, all proposals for amelioration are summed up in total costs and in annual savings in the units of money.

4. Results on acceptance of knowledge and trust in energy experts

In this paragraph, we compare the two different systems, the Belgian one and the Danish one, on information acceptance and on trust in experts. Firstly, we focus on the fact that the Belgian system provides the homeowner with a personal contact with the expert, which is not the case in the Danish system; secondly, we concentrate on the importance of the reputation of the expert or the system. This is followed by a discussion on the technical level of the given information, which is also compared to the level of the house owners' knowledge, and finally we concentrate on the importance of the social network.

4.1. Personal contact engenders trust

The Belgian and Danish cases show examples of both trust and mistrust, although it is significant that the Belgian volunteers, having asked for a visit themselves, are in a different situation than the Danes who automatically got an energy label because they bought a new house. Not surprisingly, therefore, the most trustful persons are found among the Belgian interviewees. This is illustrated by the fact that many Belgian volunteers, on the day of inspection, have followed very closely the different stages of the assessment (measurements, encoding of the data and compilation of the report). In contrast to this, there is no personal contact with the expert in the Danish system, so the trust/mistrust in the Danish cases is directed towards a system rather than a person. In one Danish case, an interviewed family had personal contact with the expert, by coincidence, and this family's comments were that it was nice to get a more informal evaluation of the house to supplement the formal written text. In another Danish case, the house owner had thought about phoning the expert, wanting him to clarify some aspects. The personal contact clearly makes a difference for the question of trust/mistrust from the laypersons towards the expert (system).

4.2. Reputation and market interest make a difference

The expectations towards the expert and the system are also different in the two countries. As told before, energy assessments are not common in Belgium. Consequently, the Belgian interviewees did not have very precise expectations. They generally knew neither Vito (the experts' institution) nor the experts. In spite of this, the latter enjoy a trust from the outset. Things like the preliminary contacts, the advisors' punctuality and their sense of professionalism help the participants of the assessment to accept and legitimate the advisors. In contrast to this, there is in Denmark, from the outset, a potential scepticism towards the expert and the system. This scepticism originates in that the person who provides the energy label is normally the same as the one who makes a report on the technical conditions of the house, which is another Danish

²The SEREC research project (Socio-technical factors influencing Residential Energy Consumption) is a 2-year project associating the Institute of Demography of the University of Louvain (UCL), the Flemish Institute for Technological Research (Vito) and the Danish Building Research Institute (SBI). The Belgian Science Policy Office (www.bel-spo.be) financed this project in 2004–2005.

mandatory system related to house transactions, and this system has recently been criticised in the media for being scammed work, with which the experts earn easy money. Several of the Danish interviewees refer to these critics, when we ask for their trust in the label, even though they might think that their energy label is done quite well. The most sceptical of the interviewed, Kristensen, ironically expresses it this way: *“Well, the list of advice they give is actually a copy of previous lists of advice. I think they just put it in a copy machine every time they have to make one. Then they just take a copy, I think”*. Together, this shows the importance of building and sustaining a good reputation in an energy labelling system.

The energy experts issuing the labels can be compared to other types of experts. From the Belgian interviewees, we hear that the advisors, contrarily to salesmen and go-betweens (like heating specialists) do not look after their own interests but give external and “objective” information. As told by a Belgian interviewee, they present the advantages and disadvantages of the systems. In the Danish interviews the energy labels are compared with the labels on white goods. Some of the interviewees stated that, if it is the producers who label the products themselves, this highly devaluates the system. So in general this points towards that there is less trust in systems with marketing interest.

4.3. Levels of knowledge

The technical level of the information can be both too complicated and too simple. In Belgium, the advisors explain the results orally after the measurements and the calculation of the resulting labels. The participants can also read the report, which is given to them the same day. In general, the oral information seems more comprehensible to the interviewees. Some interviewees have read the written report, although all are not as enthusiastic with regards to it. Some found the information too technical, complex and detailed; as Wim says: *“I found it very nice that they came, but I think that the report could be more synthesised, more ‘straight to the point’”*. In Denmark, only a few found it difficult to read the report. On the contrary, some find that the information in it is too obvious, as Hillebrandt says: *“Well the things that it said was that you could change the old windows. Yes, but that you could see yourself”*. In Belgium, most of the interviewees have found some interesting information in the advisor’s explanations and pieces of advice. By this positive point of the assessment, the experts gain the participants’ trust. On the contrary, in Denmark, some of the interviewees did not find any new knowledge in their label, which engenders the feeling of scammed work and mistrust.

Trust in energy experts does not appear to be related to the amount of previous knowledge in energy matters among the participants. Obviously, all house owners do not have the same level of knowledge in the field of energy consumption. Some have done a lot of works on their own

and have learned by trying; others have a more theoretical knowledge. Those having theoretical knowledge themselves, for example having a university degree in sciences, need to find consistency in the information they get from the advisor and what they already know or what they can find by themselves: *“the people from Vito have done an energy simulation, so it’s clear that it may be more interesting to switch to another heating system [than the electrical heating] but we must see if it is feasible and when the investment can be profitable (...) [and ask] acquaintances, who have more or less the same dwelling volume and who are using gas, how much they are paying per year and we must see a little”* (Michel). However, also the interviewees who have (much) less technical knowledge than the energy expert are handling more than just taking in the received information. In the following section, we will see how advice handling gives importance to the social network of the house owners.

4.4. Social network and societal deafness

All the interviewees relate and compare the information received during the energy assessment to what they already knew from their social network (relatives, colleagues or friends) or from larger organisations (consumers’ organisations, media, including publications from the energy suppliers). The next two interviewees have an old boiler and in both cases, the energy expert recommended to replace it: *“he also said ‘gas’ (...) and I myself have always had a good a-priori. (...) It’s true that in ‘test-achats’ [the journal of the main consumers’ organisation], they also recommend gas boilers, if one is to replace it. (...) I have spoken to my father-in-law, who is an engineer and who is also always quite interested in these things. He also has gas (...)”* (Luc). This convergence in points of views is not found in Bernard’s case and he won’t replace his boiler: in fact, he had forgotten this recommendation, he found it when showing the report to the interviewer: *“the important stuffs: to replace the boiler by a new one. In fact, the boiler is the same (...) since 1973 and then, we have replaced the burner, 5 or 6 years ago, because the installer found that it was not necessary to replace the whole boiler.”* He then speaks about other things to later say: *“No, we have no other work to do [than to replace some windows], no, we are happy.”* (Bernard). This necessity of the consistency of the advice is also pointed out by Goldblatt (2003). It may be hypothesised that these comparisons and this search of consistency within someone’s social networks are one mechanism through which new information is brought to discursive consciousness, the condition according to Hobson (2003) for questioning practices and bringing about changes.

In other cases however, the information is not really brought into discussion with others, and what happens is more like a lapse of memory, as also noted by Hobson (2003) and suggested by the analysis of Bartiaux (2005) on ‘societal deafness’ to upsetting information on environ-

ment: “*this information could have been useful but in the meantime, I have forgotten it because there were no investments to do*” (Wim). The openness to environmental information is depending on the possibility for the house owner to hearing it, which also relates to an agency feeling and to the social position of the house owner. If the information is not taken in, the house owners may justify their behaviours with what can appear as fragmented rationales. Thus the societal deafness can be interpreted as a societal self-defence mechanism for handling conflicting rationales where the norms in the environmental information conflict with wider societal norms on consumption or with norms of the house owner’s network (Bartiaux, 2005).

4.5. Acceptance of knowledge and trust: conclusions

To sum up, the Belgians seem to appreciate their assessment more than the Danes appreciate their energy label, which is not surprising, as the Belgians themselves have asked for it. The Belgian interviewees trust the energy advisors and generally find that they get new information, even if they sometimes find it too complicated. Some of the Danes are more sceptical towards their system, not because they don’t trust the skills of the expert but because of the standardised and anonymous pieces of advice they get. The generalised conclusions on acceptance of knowledge and trust are the following:

- Personal contact with the expert engenders trust.
- The reputation of the system or the expert matters.
- Too obvious or simple knowledge devaluates the trust whereas too complicated knowledge is ignored.
- Information from different sources, including from the expert, must be convergent.
- Even if trust in the energy expert is high, advice from the expert will always be interpreted, namely in function of the house owner’s previous knowledge.
- The social network is important both as regards promoting and hindering acceptance of knowledge.
- ‘Societal deafness’ and individual lapse of memory of received advice are likely when information is in conflict with established norms.

5. Results on implementation of recommendations

In the previous section, we have investigated how the recommendations are taken into consideration or how they are ignored. In this section, we see if and how they are implemented. Even if the recommendations are accepted in principle, the house owners still may not follow them. Put otherwise, the house owners can be more or less inclined to change the house according to a lot of other considerations than the energy advice and recommendations. In Belgium, Bartiaux et al. (2006) have found that even if the trust in energy experts was high, only 11% of all proposed

measures have been implemented one year after the energy assessment by the 40 households who volunteered to have this customised advice—the 10 interviewed households referred to in this paper being selected from these 40 households.

In general, what we propose here is that the understanding of how, when and why some pieces of the advice are followed and others are not, comes from a daily life perspective. In this explanation, people are bound into social, material and cultural structures which are not that easily changed, and especially not if criteria other than energy consumption run counter to the advice. Other possible criteria can be mentioned and will be further exemplified: aesthetics, comfort, identity, lack of support from the social networks, saturation of domestic works, household economics and payback time. These factors, either alone or more often in combination, appear to be useful to understand which projects are on the top of the ‘running list’ of house renovations to be done, or why some pieces of advice are not followed.

5.1. Aesthetics and taste showing

As an example of how energy projects are prioritised among other renovation projects, the woman in the Villumsen family says about insulating the roof: “... *You will have to raise it 10 cm and that will mean a lot for the visual expression of the house, and altogether it is a very big operation, so we really do not have that on our minds.*” And her husband adds: “*Yes, and we need a new entrance first and a terrace too.*” Clara is a Belgian woman who—even though she expresses in the interview that she cares about environment and non-wasting principles, and despite the fact that she is aware of the consequences her aesthetical decisions would have on energy consumption—has opted for the aesthetical criteria during the renovation work. She says: “*we have broken the wall, here and downstairs, it’s very beautiful, but I don’t know if it is really great for energy consumption...*”. In the Danish cases, one of the men, Henriksen, is very concerned about the visual expression of his old and beautiful house, which is badly insulated with single glass. The house, consequently, has a huge heating consumption, which he is quite intent on reducing. Henriksen, however, does not like new double-glassed units both because of aesthetics and because of better quality in old materials: “*I don’t want new windows! ...Double glassed, I don’t want at all. I only have a single door upstairs, which is double glassed (...). This door is actually the one in the worst condition even though it is only 20-years old, whereas the other ones may be 100-years old.*”

5.2. Comfort and convenience

Other reasons for not following the advice are related to the well-known criteria of convenience and comfort (Shove, 2003), as shown by Marie, whose new house got a rather weak label for the envelope: “*the improvement in*

this respect, if I remember well, was effectively the inside wall in the attic that could be improved. That is the improvement which could have been the most important, but it has not been realised because it is a huge work and it is an attic that is not fit, where it is hardly possible to stand and so it's true that we have not brought modifications to it because we do not feel now any discomfort. (...) [The expert] also acknowledged that the works we should have done were too important as related to the supplementary well-being that we could have received." On the other hand, some measures appear to be convenient and easy to implement, as they require, for example, no huge investments neither in time nor money; as Clara says about insulating pipes: "We have realised that it was interesting for our consumption and there was not much to do to get a small gain."

5.3. Identity

Another criterion is related to the question of identity. If following the advice is in line with the identity of the interviewees, or in keep with the household's plans for the house, it may induce the activity. However, the following stories show examples of how the opposite may also be the case. A young Danish family, still without kids, had purposefully bought a small, low-quality house, in order to rebuild it nearly completely on their own ideas, and on a longer term. In that case, the measures recommended in the energy-saving scheme were totally ignored, as Kristensen says about the energy label on their house: "Well, the advice that is in it... Now I had that belief that everything just didn't matter, because it was to be removed anyway. I am only happy that it was in that (bad) condition". In Belgium, Antoine says: "The energy assessment occurred after the renovation (done when moving into their house). I think that after it, we only installed the thermostat, which we planned to install anyway. After, other works have been done (...) and some are still to be done. (...) the thermostat, that we planned to install anyway." This repetition suggests the hypothesis that he wants to show himself as the master of 'his' work of renovation, despite the fact that his technical knowledge is somehow limited. On the other hand, he will not insulate the back facade as recommended: a possible explanation is that the energy assessment procedure did not give him precise instructions on how to do it, so he could not integrate the required measures in his work plan and make this project his own.

5.4. Social support and discursive consciousness

The lack of detailed instructions may also have prevented this recommendation to be brought to "discursive consciousness", in Hobson's terms, and thus to make the action or the change possible (Hobson, 2003). Several householders we met for the Belgian interviews had recommendations on insulation that were not carried through: indeed, the practical knowledge on this topic is

very weak and so is the social support in this matter, probably because dwellings in Belgium are the least insulated, in comparison with other European countries (EURIMA, 2005). Yet, social support and social recognition as well as consistency between several sources of information are crucial to bring about changes, as discussed in the previous section.

5.5. Time pressure

As the other factors, time pressure may either boost energy-saving renovation works or prevent them when there is a saturation of domestic works. This was clearly the case for an ecologically minded Belgian woman who had just completely renovated her house using natural materials wherever possible. The house had however not been insulated and she rejected the recommendation on insulating with the argument "again days and days of work and dust". On the other hand, lack of time may be a strong push factor for having all relevant renovations done from the start, and part of these renovations may also incorporate energy renovations as in one of the Danish families which realised that they needed a new bigger and more practical house with multiple births coming soon. They knew that their time in daily life would be scarce, so in the financing of the new house, they included money for renovating it and, before they moved in, they had everything done. As Hindø says: "The windows were in such bad condition (...) we would have had to paint them and that would have taken 100 years, and then they would maybe have lasted only four years (...) So we could have done it as well before we moved in and get something that was orderly (...)" and energy-saving, as they installed energy glasses.

5.6. Household economics and payback time

Two factors are ascribed special attention in the Danish label and the Belgian assessment: economy and payback time. According to Watson and Shove (2005), "household economics is not a sufficient explanation of why people DIY" (Do it Yourself). They echo a result of Munro and Leather (2000) who found that renovation works for improving the home as a consumption good—providing comfort, relaxation and a context for social interaction—are prioritised substantially above those enhancing the property as an investment.

Nevertheless, household economics has a different meaning for every house owner; among other things, it depends on the duration foreseen to live in the reviewed dwelling. Indeed, the gap is wide between two young Belgian couples: one is planning to sell after a few years and thus wants to know if its dwelling meets the legal norms and limits the investments to "replacement investment". Another couple views its house as its home for a longer period and makes durable investments, maybe also because they have a strong "ecological conscience", with its

moral implications. From the Danish cases there are also several examples on doing energy renovations even though there might not be good economy in it. As Hindø says when asked if they thought about energy consumption when changing windows: *“Yes we did. We knew that we wouldn’t economise on that. Well it may not be profitable in that sense but...”* This family tells that they chose ‘energy-windows’ also because of the better indoor comfort they expected. Furthermore, it is worth noticing that in general, house owners do not expect renovations to be profitable in a single economic sense. To install a new kitchen is not a good investment, and in the same way, some house owners do not always think that all energy renovations must be profitable. That is, on the other hand, not the same as saying that money does not count—economy is always also an aspect of a renovation project.

In the Danish system, it is explicitly stated that only the measures that are economically reasonable should be mentioned and in this way, economy is chosen as a major criterion by others than the house owners. In the Belgian assessment, the house owners at the time of the energy assessment procedure were provided with the payback time of each recommendation: this information was the sole criterion of decision that was computed by the software. This situation of ‘monopoly’ probably overestimates the psychological weight that the interviewees gave to these payback periods. The calculation of this variable as well as the underlying hypotheses on energy prices may also be questioned (recommendations on these topics are made in another publication: [Bartiaux et al., 2006](#)). During the in-depth interviews, nearly all Belgian interviewees report on comments made by the energy advisor about payback time on measures having too long just such a payback time. The following quotes also show that when the energy expert does not support a recommendation, it is not followed, whereas the reverse is not true (if the expert supports the recommendation, it will not often be applied).

- *“Not worth the investment” they say*, about replacing the windows with double glass.
- *“I was interested by the solar, at one moment. (...) He says that it was a 2500 € investment and that in Belgium, it will never be profitable. (...) Well, I am not an expert. I am not an engineer either. I am just interested in that [energy savings].”* (He speaks four times about solar energy during the interview, regretting each time that the energy advisor did not find this option a good solution.)
- *“I had read that solar panels would be interesting but precisely the Vito [Company of the expert] has done the study and 33 years would be necessary to make them profitable.”* Also this interviewee mentions three times the solar panels with regrets each time.
- *“They say themselves that it was very expensive: to insulate the facade”*

5.7. Obtaining a better label: a motivation?

The last criterion to be discussed here is the encouragement of the label. In other words, does the label, to some extent, encourage improvements? During the Belgian in-depth interviews, only one person considered upgrading the label as a challenge. The advisor, however, soon discouraged the same person: *“He [the advisor] clearly stated it—and this has somewhat comforted us—that “with a house like this one, you will never reach an A-label, because the house is not adequate for that. The materials are not modern.”* In this case, the information delivered by the label turns to be of no use because of lack of scenarios to get a higher label. Desire for improvement of the energy label is not very often expressed. On the contrary, in a Belgian interview, a young couple expresses its satisfaction with the actual label (C): *“It is not super-insulated, they say, but well [insulated]; we are happy.”*

5.8. Implementation of recommendations: conclusion

Overall, the analysis on inclination and will to implementation has shown that the few pieces of advice implemented were the result of a unique combination of many variables that include aesthetics and taste displaying, convenience and comfort, social support and comparison, identity showing, time or money pressure. The combination appears to be unique for each of our 20 interviewees and it also depends on the advised measure. Indeed, none of the interviewees had implemented all recommendations or were planning to do so, even in a very distant future. In some cases, choices may stay ‘open’, when one choice criterion does not outmatch the others.

6. Conclusion

In this article, we have compared two different systems on energy-expert advice in two different countries. The comparison is primarily based on ten parallel qualitative interviews in each country, though the results are backed up by previous empirical work in both countries. Still, further analysis on these topics may strengthen the results presented in this article and we would recommend similar studies in other countries. In the article, we have discussed differences in trust and mistrust in the systems and we have concluded that there are big differences between trusting systems and trusting experts, and that it is easier to trust experts as persons than systems, provided that the expert behave in a trustworthy way. Furthermore, we concluded that it makes a difference if people have asked for the advice themselves or if they just got it. In general, through the analysis of the interviews, we have shown that people are not empty recipients of the new information given by the energy-performance label. They rather are actors that interpret or reject new information on the basis of their previous knowledge and of the norms of their social network. Among other things, people look at what interest

in the subject the person or system that provides the knowledge has, and if the person or the system itself has some economic interest, this devaluates the reliability of the knowledge. However, there seems to be a general acceptance that energy advice for house owners is needed.

Even if Belgians trust their energy expert more than Danes trust their label system, both groups do not follow the advice. Pieces of advice must be quite simple, but to carry them through often requires time, work and money, and consequently, following the advice has to be prioritised against other interests in the everyday life of the family. In this prioritising process, other criteria such as aesthetic, identity and convenience may be viewed as more relevant than energy savings. Economy is also always a relevant aspect of renovating the house; this does not mean, however, that payback time is very relevant from the house owners' perspectives. Renovating a house is normally not seen as a simple investment and as energy measures are often a part of renovation projects, which are carried through for other reasons than energy, simple payback time is not really in question for most house owners. This is interesting, as payback time is given a high priority in both the Danish and the Belgian systems and is the only criterion that is taken into consideration from the system-perspective.

Summing up, this paper shows that the idea of households as rational economical actors who will renovate their homes in an energy efficient way if they are just given the right knowledge has to be abandoned. This does not mean that people in general are irrational or that they do not take care for their own interest, it rather means that rational behaviour from an everyday life perspective includes many other elements than just economy, as for instance identity and social comparison, convenience, time use, etc. This does however not mean that the energy labels on buildings are a bad idea but they should be seen as one input among others to people's own knowledge and communication about their house and its renovation. Furthermore, we would recommend the focus on payback time be toned down and substituted by information on cost of investment and possible savings, to let people judge for themselves. Finally, the Belgian experiences encourage to think about a system where the expert comes to the house after the new owners have bought it rather than the normal idea of the label, where you get the information before buying. To buy a house however is different than buying appliances, and the Danish interviews show that people do not use the labels to decide which house to buy: they rather use it to decide what to do with the house when they have bought it.

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