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Knowledge on Climate Change and Energy Saving Renovations by Apartment Owners in Bulgaria and Latvia. A Qualitative Study

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Abstract: Do apartment owners in Bulgaria and Latvia carry out energy-saving practices in their homes, and what are the justifications thereof? Do they relate these practices to climate change or to their environmental knowledge? These are the main questions investigated in this research. Data are drawn from a qualitative survey of dwellers' renovation activities and the motivations thereof. Results indicate that the poor conditions of multi-apartment buildings and the feeling of being cold or uncomfortable are sufficient levers driving energy-related renovations in privately-owned apartments. Environmental concern is never expressed as a lever for undertaking renovation, either in Bulgaria or in Latvia and there exist some scepticism and misunderstanding concerning climate change.

Keywords: *Energy-related renovation, climate change, Bulgaria, Latvia, qualitative study.*

Introduction

The 4th report of the Intergovernmental Panel on Climate Change (IPCC, 2007) states that the reality of climate change is beyond doubt and that it

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is very likely that global warming is caused by human practices generating increasing amounts of greenhouse gases. Thus, 'the 21st century is set to be one where issues of climate, resources and energy are paramount' (Szerszynski and Urry, 2010: 1). The same sociologists continue: 'human practices are utterly central to this particular global risk and (…) the only possible way of 'mitigating' potentially catastrophic change, apart from vast and improbable geo-engineering projects, is through transformed human practices' (*idem*: 4). This call for transforming human practices and thus for reducing fossil energy consumption was already clearly stated in 1992, in the Agenda 21: 'achieving the goals of environmental quality and sustainable development will require (…) in many instances (…) reorientation of existing production and consumption patterns that have developed in industrial societies and are in turn emulated in much of the world' (UNCED, 1992: 4.15).

Most studies on energy consumption in relation to sustainability issues have been realised in Western or Scandinavian Europe, or in North America. The present study is instead devoted to two Eastern European countries, Bulgaria and Latvia[1] and investigates whether apartment owners undertake energy-saving renovations in their apartments, and what are the justifications thereof. Do they relate these practices to their knowledge of climate change? And to what extent are these discourses on climate change and responsibility in coalition with other discourses in these countries?

Bulgaria and Latvia have experienced considerable political and economic change since the fall of the Berlin Wall in 1989 and since the collapse of the Soviet Union in 1991 and, for Latvia, the regaining of its independence. For neighbouring Estonia, Keller (2005: 66) observes a double movement 'from plan to market' and 'from totalitarianism to democracy'. Somewhat ironically, for Hamilton (2010: 98-99), 'the roots of climate denial' lie in the reaction of American conservatism to these events in Eastern Europe, 'as the threat of the 'red menace' receded'. Environmentalism was then portrayed as a new internal enemy.

In this paper, theoretical background and methods are presented, and then building stocks and energy-related renovations taking place in Bulgaria and Latvia are briefly described, while the next section is devoted to representations and knowledge on the environment and especially on climate change. The relationship between environmental knowledge and energy-saving renovations is subsequently discussed. In concluding, a hypothesis is formulated to contribute to the understanding of why environmental knowledge is not a justification for energy-efficient renovations in Bulgaria and in Latvia.

Studies on Energy Consumption and Environmental Knowledge: A Brief Review

This review is organised around the same three topics as the results sections: energy-related renovations, knowledge on climate change and the relation, if any, between them. Many studies reviewed here draw

from sociology and environmental psychology – whose interest for these matters is older than is sociology's – although we agree with Shove (2010: 1279) on 'the incommensurability of these contrasting paradigms, and hence about the impossibility of merger and incorporation'.

Household Energy Consumption

Many studies have been done on households' energy consumption and energy saving practices, by scholars of different disciplines, the first ones being realised by engineers 'where the notion that a building performs at a certain level of efficiency is a central idea, as are related beliefs that research can specify the real-world performance consequences of, for example, insulation levels, the square footage, thickness and location of glass, (…) in mathematical models of home energy consumption' (Hackett and Lutzenhiser, 1991: 451). These studies were then complemented with economic variables, and later on, psychological ones. All these disciplines share the common view of a rational and individual consumer whose behaviour and behavioural change can be predicted by appropriate price signals, adequate information, and – as psychologists add – by favourable attitudes, following the theory of planned behaviour (Ajzen, 1991).

However it constitutes a quite narrow perspective (Bartiaux, 2007), this individualist view is central to many climate policies: 'policy – as currently configured – is incapable of moving beyond the ABC – this being an account of social change in which 'A' stands for attitude, 'B' for behaviours, and 'C' for choice' (Shove, 2010: 1274). Similarly, Hargreaves (2011: 80) argues that 'in line with neoliberal political economy, most current policy responses focus on "sovereign consumers' instead of planning for 'more fundamental structural change in society''.

When it comes specifically to energy-efficiency investments in homes, such as installing double or triple pane windows, roof or external wall insulation and so on, studies in economics (for a review see DeCanio, 1998 and Maréchal, 2009) deal with the relationship between the household's income and these energy-related renovations, namely by studying the 'efficiency paradox', as the economists call it (i.e. why households do not undertake energy-related improvements that are shown to be 'profitable' investments?). In Belgium, a representative survey has shown that households with the highest income are more likely to report the intention (not necessarily followed by action) of installing a more efficient heating system. Bartiaux, Vekemans, Gram-Hanssen, Maes, Cantaert, Spies and Desmedt (2006: 126) and Maréchal (2009) have suggested that a good share of the applications for a regional subsidy for energy-related investments (boiler or insulation) come from the richest municipalities of the Brussels Region. In addition, the landlord/tenant issue is often mentioned as an obstacle to energy-efficient refurbishment of dwellings whose owners are living elsewhere. Socio-demographic variables are also tested and, generally, household

income and size are the most significant variables correlated with household energy consumption, as shown for example in Belgium and Denmark (Bartiaux and Gram-Hanssen, 2005), Greece (Sardianou, 2007) and in the Netherlands (Abrahamse and Steg, 2009).

Studies in environmental psychology specifically evaluate the effectiveness of interventions aimed at changing energy-related behaviours. In their synthesis, Abrahamse, Steg, Vlek and Rothengatter (2005) conclude that information, goal setting and commitment can bring about some change in energy use, but with varying degrees of success. Tailored information, like house energy assessments, is reported to be more successful, as can be feedbacks and rewards. The effects, if any, can nevertheless be of short duration and 'some studies found a differential effect for high and low consumers of energy, (…) the latter increasing energy use as a result of feedback' (Abrahamse, Steg, Vlek and Rothengatter, 2005: 281). Combinations of strategies seemed to be more effective than one strategy (see also Abrahamse, Steg, Vlek and Rothengatter, 2007). Additionally, these authors nevertheless point at several methodological problems that may hinder attaining results, e.g. 'households who participate (…) tend to be highly motivated, (…) to have higher than average incomes, and higher than average education levels' (Abrahamse, Steg, Vlek and Rothengatter, 2005: 282).

To understand why energy assessments do not bring about energy-related renovations on their own, it is preferable to turn instead to social factors, such as organisation of daily live, trust in experts, information consistency and support of family and friends (Gram-Hanssen, Bartiaux, Jensen and Cantaert, 2007; Bartiaux, 2008).

In social theories of practices (Schatzki, 1996; Reckwitz, 2002; Warde, 2005), practices are the central unit of interest and are studied in their socio-technical context. Such a theoretical framework has been used to study do-it-yourself projects in England (Watson and Shove, 2008), household energy consumption in Denmark (Gram-Hanssen, 2011) and energy-efficiency renovations of homes in Latvia, Portugal, Denmark and Belgium (only single-family houses in these two last countries). One conclusion of this comparison is that maybe the Latvian study illustrates the most coherent case on this way of creating the new practice of energy renovation, with its old building stock (composed mainly of post-soviet apartment blocks), severe winters and a majority of home owners suffering from the cold – a more unacceptable feeling given current comfort norms – and unable to pay ever more expensive energy bills and 'all these factors converge' (Bartiaux, Gram-Hanssen, Fonseca, Ozoliņa and Christensen, 2011: 77). Again, the contrasting paradigms are striking between social theories of practice, which 'emphasise endogenous and emergent dynamics' (Shove, 2010: 1279), and psychological theories that 'focus on causal factors and external drivers. Likewise, people figure in the first case as carriers of practice and in the second as autonomous agents of choice and change' (Shove, 2010: 1279).

Environmental Knowledge and Concern

In environmental psychology, the concept of environmental concern – or environmental attitude – has been shown to have two dimensions: environmental preservation and utilisation, which can be associated with personality traits (Milfont and Duckitt, 2004). Schultz (2001: 337) suggests that 'the type of concerns an individual develops is based on the degree to which they perceive an interconnection between themselves and other people (altruistic), or between themselves and nature (biospheric)', or not (egoistic).

Environmental concern and knowledge on environmental issues should not be confused even if they may be positively correlated. Regarding specifically Belgium, such a correlation has been found in a survey involving electricity consumption: neither environmental concern nor knowledge of global warming 'has a significant influence when household income and size are also introduced in the model' (Bartiaux, 2008: 1176).

Several sociologists have further investigated our knowledge of climate change. According to Szerszynski (2010: 9), 'an understanding of anthropogenic climate change must be grounded in a biosemiotic analysis of the evolving metabolism between society and nature'. Indeed for him, 'the metabolic relation of humanity and nature has been understood only in narrowly causal terms, obscuring the disseminative drift of meaning and thus tilting us inexorably towards the idea of climate change as a problem that can be solved rather than an opening to be responded to' (p. 19). This opening should be developed into newer forms of solidarity and security, which are 'predicated not on closure and independence but on the recognition of vulnerability and exchange with nature' (p. 25). Climate change thus calls for these 'new relations of interdependence' (Szerszynski, 2010: 25), for another 'Worldliness' (Hird, 2010), or for 'cosmopolitan communities of risk' (Beck, 2010: 260). This opening may reconfigure the very notions of private and public spheres, since 'the threat and reality of global climate change has been 'brought home', especially in the West, as possibly 'the' global risk of the age' (Beck, 2010: 261).

Environmental Knowledge and Energy Consumption

Since the seventies, many studies in environmental psychology have analysed the impact of environmental concern on environmental behaviour, however the results are rather disappointing as Bamberg (2003) notes, assuming that environmental concern seems to explain not more than 10 per cent variance of specific environmental behaviours. Shove (2010: 1276) answers that 'the gap is only mystifying if we suppose that values do (or should) translate into action' and that this belief is one 'of the problems that the Attitude – Behaviour – Choice model itself generates'. Indeed, the translation of value into action is not done that often; already, in the 16th century, the French philosopher Montaigne noted that 'it is probably a nice harmony when the saying and the doing go together'.

In environmental sociology, studies on consumption have contextualised this gap between concern and action. Connolly and Prothero (2008: 142), for example, mention that 'green consumption must be understood in terms of a process that has led to individuals feeling both responsible for and empowered in dealing with risks to both themselves and to the wider environment'. At the same time, green consumers also experience 'confusion, ambivalence or uncertainty, (…) a result of a feeling of being individually responsible'. These ambivalent feelings about an agency taken for granted by policies illustrate social processes that are not reducible to individual and internal 'gaps' between value and action.

Another setting for research on these issues is offered by the multicultural Belgium where most environmental matters are Regional Competencies, with a Green Party present or not in each of the three Regional Governments. Different environmental policies and conflicting messages – not to speak of advertisements encouraging an escalating consumption – are thus not uncommon. These contradictions between practices and environmental knowledge are dealt with by at least two socially normalised processes, as shown by Bartiaux (2008). The first one is practices (or mental) compartmentalisation with regard to environmental consideration (as first observed in Denmark by Halkier, 2001), which means that the same person may have 'green' practices in one area of his/her daily life – mobility, food, sorting domestic waste, aspects of energy consumption at home and so on – and not in other areas. The second process is the rapid transformation of disturbing information into the expression of spleen or 'moods', a 'socialised way' of 'feeling a disengaged implication' that 'in rendering the moral experience of heart-breaking choices commonplace, makes further choices easier' (Martuccelli, 2002: 548-550 – quoted in Bartiaux, 2008: 1172). Again, these socially-shared ways of normalising the 'value-action gap' cannot be shown with the individualistic approach of the 'ABC model'.

Methodology

The above topics are explored via in-depth interviews that were realised in 2009 – 2010 with apartment *owners*, living in their apartments situated in multi-apartment buildings. So the landlord/tenant issue is not relevant here.

In Bulgaria, 16 interviews were conducted, all in the Sofia area, and, in Latvia, 18 interviews were done in the capital and other cities, as most of the multi-apartment buildings are located in the urban areas. In both countries, researchers tried to diversify the socio-demographic characteristics of the respondents. In Bulgaria, 3 informants were chosen in dwellings having an Energy Performance Certificate, whereas all other interviews were realized with owners having purchased and moved into their apartment a couple of years ago. They were found by one or two intermediaries (colleagues, relatives or friends). In Latvia, most informants were chosen in buildings where an energy audit had been done, and where

the informants had recently moved in; other informants live in buildings without energy audits – in order to obtain different opinions on energy related renovations. The informants living in buildings with energy audits were selected from the database of the company (Ekodoma) in charge of the energy audit, whereas other informants were found by intermediaries, different for each informant.

The interviews were generally conducted in the informants' dwelling by the corresponding authors of this paper. In Bulgaria, some interviews were done in a cafeteria. The average duration of an interview was about 50 minutes. All interviews were tape-recorded and fully transcribed.

The same grid of questions and the same outline of content analysis were used in both countries. In the interviews, questions about home renovation came first, whether or not they were related to energy savings. The informants were asked to provide details about the renovations done, the process whereby they were completed (from decision-making to the concrete realisations), their justifications and motivations, the planning and the types of help and advice received and sought after, if any. Environmental knowledge and other possible concerns were dealt with at the end of the interview to limit the possibility of an informant presenting his/her practices in conformance with opinions, such as environmental concerns, that might have been mentioned earlier, were the interview grid different. At the end of the interview, once a good conversation had been established, there were explicit questions about the relationship between energy consumption and environmental issues[2]. In the quotes appearing later in this paper, the interviewer is referred to as 'I'. All the names have been changed.

Building Stocks in Bulgaria and Latvia

According to the National Statistical Institute (2010), the number of residential buildings in Bulgaria is about 2.1 million, while the number of dwellings is about 3.8 million, of which 54 per cents are single-family houses and 46 per cents are apartments. Nearly 64 per cents of all dwellings are located in towns. The average number of persons per dwelling is 2 (2.3 in towns and 1.6 in villages), and the average useful floor space per dwelling is 63.8 m².

In Latvia, the total number of dwellings in 2009 was about 1 million, of which one third are single family houses mostly located in rural and suburban areas, and two thirds are apartment dwellings situated mostly in cities. The average number of persons per dwelling is also 2, and the average floor space per dwelling is 59.0 m² (Central Statistical Bureau of Latvia, 2009).

In both countries, dwellers are mainly owners occupying their dwellings, and ownership is especially characteristic among people over their forties (see Table 1).

In Latvia, informants aged 40 and over received their apartments during the Soviet Union occupation as a state merit award. They have been living in the apartments all their lives and are unable to or uninterested in moving. The younger informants have recently

moved into their apartment, in starting a family life.

Both building stocks are very old and were mainly built prior to the 1970's or even the 1960's. In Bulgaria, 67 per cents of the residential buildings were constructed by 1970 and only one percent of the stock was constructed since 2001 (National Statistical Institute, 2010), whereas in Latvia, 63 per cent of the single family houses and 42 per cents of apartment buildings were built before 1960 (Central Statistical Bureau of Latvia, 2009). Consequently, in both countries, the need for renovation of private dwellings in order to rehabilitate them and improve their energy efficiency is high. However, the Energy Performance of Buildings Directive (EPBD) and the way it is presently implemented in both countries do not favour such improvements in private building energy efficiency (Nikolaev, 2009; Ozoliņa and Rošā, 2009).

Table 1. *Characteristics of the building stocks in Bulgaria (2010) and Latvia (2009)*

	Bulgaria	**Latvia**
Housing stock	3.8 million	1.04 million
% one family houses	54%	34%
Main materials	bricks, steel/ concrete	bricks, stones, concrete, wood
% apartments	46%	66%
% built before 1970/1980	67% (dwellings)	63% (houses); 42% (apartments)
% owners	96%	89%

Source: Bartiaux (2011: 14); Central Statistical Bureau of Latvia (2009).

Currently, in Latvia, due to the implementation of a national support programme for energy efficiency, called Infrastructure and Services 2007-2013, more and more multi-apartment buildings are going to be fully renovated. However, the programme started slowly . There are no data available on the total number of renovated multi-apartment buildings in Latvia.

Energy Saving Renovation Work in Privately Owned Apartments

Informants who live in apartment buildings think more about their living places, considering the apartment alone as their own property, but not the building as a whole. Consequently, more renovation works have been done inside apartments.

Inside the apartment

According to interviews in both countries, renovations are preferably done all at once, before moving in, and envisaged globally. Many renovations, such as repainting, refurbishing and the like are related to the appearance and aesthetics of the apartment. However, if money is available, the new owners also engage in energy-related renovations such as changing windows, wall insulation, either from inside or outside.

- I: What kind of renovation work have you done?
- Mr.: (laughing) a lot.

> - Mrs: Starting with insulating of the outside wall, here you can see (showing the wall) with 5 cm polystyrene, and for this wall, with 1 cm. (Evija and Rudolf, Latvia, young couple, 22 years old, students.)

Other renovations implemented in Bulgaria are the insulation of floors and, in some cases, the installation of a new boiler. In Latvia, respondents also frequently reported changing doors and heating systems, and installing radiators and thermo-regulators in order to have the possibility of regulating indoor temperature – without energy cost change: owners of apartments have no control over their building's central heating system (if such exists).

As expressed by the informants, the main reason for carrying these renovations out is different in both countries. In Latvia, the first reason evoked is cold weather, while in Bulgaria there seems to be a consciousness that these old apartments were built in accordance with different standards and that if the new owners want to have smaller utility bills and more comfortable, cosy homes, they need to invest in such renovations. As Beck (2010: 257) puts it: 'the expectations of equality are increasing and, in the process, are de-legitimizing and destabilizing the system of national-global inequalities'. The following reasons the informants state are the same in both countries: discomfort and reduction of energy bills. In all cases, the renovations actually done are believed to have the greatest influence on comfort, energy consumption and energy bills, and are related to the very bad pre-existing conditions.

> - I: Of all the work you did in the apartment, what was the most important for you?
> - Mrs.: The most important is that I have changed all the windows, because now it is warmer. (Gunita, Latvia, woman, 40 years old, social worker.)

> - Heating bills have gone down since the outside walls insulation. (…) We had to insulate the outside walls because the dwelling is located on the corner of the building. In winter it was cold in here. (Teodor, Bulgaria, man, 33 years old, chemist.)

In Bulgaria, the way in which these renovations are implemented varies greatly with the different respondents. Some of them have the financial ability to hire one person or a company to take charge of the renovation. However, that is the most expensive solution and requires knowing a person or a company one can trust, which is extremely difficult in the Bulgarian market. Another especially important issue for informants living in smaller communities is the availability of professionals. In our samples, professionals are important for providing advice and conducting part of the work: they are always said to have a positive influence in Latvia, but not in Bulgaria.

So, most often, people are themselves in charge of the renovation work. They hire the various professionals they need based on their own experience or on recommendations from family members, friends and colleagues. Social networks (relatives, friends, and colleagues, with sometimes one professional in the construction sector) play an important role, acknowledged

in both Bulgaria and in Latvia. Very often people themselves or their families and friends are involved in the work itself (supervising, giving advice, doing the work, cleaning up afterwards, etc.).

Limitations in carrying out energy-related renovations are always said to be financial. When some energy-related renovations are done, and others are still at the planning stage, respondents confide to us that the most important reason for not making these improvements is financial. E. g.: *We haven't changed the other windows, because we don't have the money and, anyway, they are good*. (Zigrida, Latvia, woman, 72 years old, pensioner.)

In the Common Parts of the Building

In both countries, the apartment building is the property of all the apartments' owners; therefore, renovations are carried out on the whole apartment building only if an agreement is reached between all the co-owners, as in Bulgaria[4], or among the majority of co-owners in Latvia. In Latvia, there are normally only discussions about full building renovation, which is why complainers hesitate in initiating anything – for full renovation costs are very high. Thus, in both countries, renovations are organized with extreme difficulty as the people living in the building cannot easily reach a consensus on what should be done, how and how much should be paid for the work.

> And we [my family – authors' note] are trying to convince our neighbours that… we all have a common interest, that there are things to be done that everyone can do, can help, because our dwelling doesn't end with the entrance door. There's an elevator, there are stairs, lights, a building entrance, neighbours, etc. (Tea, Bulgaria, woman, 40 years old, economist.)

> The most important condition for carrying out such a big renovation is consensus within the community. (Lyubina, Bulgaria, woman, 35 years old, lawyer.)

Renovations are discussed when the building's condition is seen as very bad (leaky roof, antiquated plumbing, etc.) or when utility bills are very high.

> The roof hasn't been replaced. It's only been repaired. And we were discussing whether or not to totally replace the roof, but who can collect such an amount? It would probably cost about 15,000 BGN! We are here with these old women. We can't do it. It will probably not be done this year. (Antonia, Bulgaria, woman, 40 years old, human resources manager.)

Nevertheless, there are a few exceptions. In Bulgaria, participation in the Demonstration Project on Dwelling Renovations results in full renovation of the building. But only dwellers who are already well informed about energy-related renovations enrol in such a program. Otherwise, it seems that when the building is a relatively small one, with about ten apartments in it, the apartment owners can come to an agreement and achieve a lot. There are two examples in the sample studied.

> - Mrs.: Well, in general, they [the apartment owners – authors' note] all wanted to have outside wall insulation.
> - I: So, you were lucky in that everyone wanted it?
> - Mrs.: Somehow everyone was

> convinced of it. How strange it is, it happened. Well, it's not that big a building. (Eva, Latvia, woman, 63 years old, civil engineer.)

In Latvia, most often the building management company is one of the initiators of the renovation work. They talk with the dwellers and encourage them to make full or partial renovations. When a quorum of 51 per cents of the residents is reached, residents generally agree on the renovation to carry out. The main and generally first projects are roof replacement, installation of new windows and doors in staircases, pipeline system installation, as well as insulation in basements and walls. Wall insulation is the most expensive because of the large area involved. Heating and hot water systems are usually very old and most often haven't been renovated in 30 years.

> Before, nothing (…). Then the central [building management company – authors' note] did something. They repaired the central heating in the basement. We collected the money from the flats, somehow, (silence); then they repaired the central heating, they put new heating in the basement, but only in the basement not in the flats, no. (Janina, Latvia, woman, 74 years old, pensioner.)

Another obstacle for carrying out energy-related renovations is related to the shortage of financial resources mentioned by almost all respondents. It seems that people find it easier to implement renovations when they are able to pay in instalments or are offered a discount.

> It would be perfect to do outside wall insulation of the whole building, but I'm not sure about my neighbours; it will be easier to persuade them if we pay by instalments. (Miroslava, Bulgaria, woman, 39 years old, graphic designer.)

Finally, in this Latvian sample, when a discussion about renovation work involving floor or ceiling insulation arises, people who live in the middle of the building are often not interested in doing such work because they don't see any benefits in it for themselves. The delimitation of the private and public spheres is a common feature with the respondents' knowledge on climate change, as shown below.

Environmental Knowledge in Bulgaria and in Latvia

What do the respondents know and say about climate change? What words, images, comparisons, etc., do they use when invited by the interviewer to say what they know about it?

In Bulgaria

In Bulgaria, people are generally familiar with the concepts of 'global warming' and 'climate change', because they are discussed a lot in the media in a way similar to Western broadcasts, so that Beck's argument is also valid when he says (Beck, 2010: 261): 'the Western news media's spectacular visualization of climate change, presenting dramatic and symbolic scenes collected from around the world, has undoubtedly helped to establish the latter's status as a widely recognized global challenge'.

Furthermore, Szerszynski and Urry (2010: 4) add that '[a]ny description and prediction of climate change and its impact is entangled with specific

imaginaries of how society is, and how it ought to be' and indeed, several Bulgarian informants believe that they can contribute individually to using fewer resources, but they think that the more important share of saving should be initiated and done by their government.

> One of the important things is to prevent the waste of energy or water, or other natural resources. Actually during the winter I probably consume more electrical energy than before – because I use air-conditioner [air conditioning is the cheapest way of heating in Bulgaria – authors' note]. But I really try to save energy and water; I really try to not waste resources – at home, at the office, in the car. (Zhoro, man, 30 years old, economist.)

> - I: In your opinion has energy (and water) consumption got something to do with environmental issues?
> - Mrs.: Mmm, definitely, and oil is released into the ocean, all these things do damage, well, not only what happened lately with that oil near the States (...) that was spilt, I mean ships regularly leak oil into the sea, that's part of their procedure (...) That too contributes to climate change and definitely, we are responsible, there is no one else – cutting down forests (...) without (...). I mean, I haven't seen anyone reforesting recently in Bulgaria... That worries me a lot and I believe that apart from everyone being responsible, there are some government policies this depends on. (Boryana, woman, 30 years old, project manager.)

Most of the respondents indeed believe that there is a link between environmental issues and energy and water consumption. For them, the greater the energy consumption, the more damage people inflict on nature, which leads to climate change. This change in climate is perceived as negative.

> - I: In your opinion has energy (and water) consumption got something to do with environmental issues?
> - Mrs.: The link exists, of course. The higher the energy consumption, the worse the chances of preserving the environment. I think all people should save energy, not waste it. (Marieta, woman, 41 years old, sales operation expert.)

Some respondents, however, think that Bulgaria is already slowly moving towards a more eco-friendly way of generating energy because alternative energy sources are used more and more frequently.

On the other hand, a few respondents are sceptical: some talk about naturally occurring cycles of climate change which cannot be influenced by human activity, and others call climate models into question.

> - I: What do you think about global warming? What can you tell me about this phenomenon?
> - Mrs.: Well, as for my personal opinion (…) I have read different things, different articles (…) I don't know how much of it is true. (…) This winter was colder than the others. I don't know if this global warming is a fact (...) Personally, I'm… a sceptic in that regard. (Eva, woman, 63 years old, civil engineer.)

> - Mr.: No, no, no, I'm not saying that there is no global warming. I'm saying that I don't believe everything that the media state. I'm not saying what does or doesn't exist.

> - I: And what exactly do you not believe in?
> - Mr.: The short answer is that all such forecasts are based on computer models, and (pause), it is rather obvious that such models are very unrealistic. (Peter, man, 30 years old, researcher.)

In sum, knowledge on climate change involves some scepticism and approximations but is related both to an individual agency feeling to save resources and to expectations for governmental actions.

In Latvia

In Latvia, almost all informants (15 persons out of 18) have also heard information about climate change. There are different opinions regarding those issues. The main group of informants feels confused regarding the information propagated on climate change. They cannot decide whether it is part of the Earth natural cycle or whether humans have made a substantial impact on climate. At the same time, the informants do not believe that they can do anything about it, unless they all do it together.

> - I:Would you like to add something?
> - Mrs.: For the most part, no. If I had to think about it [negative aspects of climate change – authors' note] all the time I wouldn't have long to live. One person can't do anything about it [climate change – authors' note]. (Loreta, woman, 26 years old, accountant.)

Some informants, mainly men, asserted that climate change issues amount to a business for somebody and that climate change is a cyclic process because the information for deciding which factors have the highest impact on the environment is insufficient.

> I follow it all the time, but you want to know my opinion? It's all one big business. It's profitable for somebody that money change hands. It's profitable for somebody to keep us in panic. Or, indeed, the world according to those who highlight the fact that we are guilty, that the glaciers are melting, the polar bears have nowhere to live – I don't believe it, it's overdone. Are you sure that those who are touting all over the place… they really do not understand that everything is cyclical. We just don't have someone to call and ask: 'Tell us how it was 100 years ago?' (Neo, man, 60 years old, bank specialist.)

When informants were talking about climate change, they related it not only to deforestation, air pollution, and glacier melting but to the ozone-hole problem as well – a confusion also found in other countries, namely Norway and Japan (Wilhite, Nagakami, Masuda, Yamaga and Haneda, 1996). Also, informants pointed out that the winters in Latvia have changed and are becoming warmer. This observed fact is considered as supporting the existence of global warming:

> I have heard a lot that climate change exists. That it is affected by the emissions and deforestation and so on… I think that there is climate change and global warming, because the water level in the oceans is rising, glaciers are melting, and the ozone-hole too… (Lasma, woman, 23 years old, civil engineer.)

According to their answers to questions concerning energy consumption and environmental issues, the informants could be divided

into three groups.

1) Informants (10 persons out of 18, mostly under 40 years of age) who consider that energy savings and climate change go hand in hand and have a more global origin (e.g., pollution from industrial sectors, each country's government attitude), and depend less on each person's environmental behaviour.

> - I: Well, yes, and if we talk about the environment and climate change in general, in your opinion, do energy and water savings have anything in common with climate change?
> - Mr.: That our negative contribution when we are not saving energy definitely doesn't have the kind of impact level that would be extremely significant, but it definitely has some significance. (Reinis, man, 24 years old, bank employee.)

2) Seven informants do not believe or say that they don't have any information on the link between energy savings and the environment. This opinion was common among informants living in rural areas and in the 50-75 year old age group.

> - I: Do you thing that if you save energy, you also reduce environmental impacts?
> - Mrs.: I don't know… I have not thought about it. Energy? (Silence) Probably. Maybe, I don't know, no, but in fact in reality I don't know, how could I? How the energy might affect the environment, I don't know… (Rasma, woman, 59 years old, inspector in the State Agency of Social Insurance.)

3) Only one informant understand[s] that there is a link between energy savings and impact on the environment, based on the information provided by TV, radio and other media, but cannot explain it (Gunita, woman, 40 years old, social worker).

Individual agency seems to be expressed less often than in Bulgaria, whereas scepticism frequently is. Several informants mention the polar beers, which, for Yusoff (2010), play a role 'in the contemporary 'political aesthetics' of climate change (…) 'as the figure on which loss, life and energy are seen to depend' (Szerszynski and Urry, 2010: 5). For them, 'the use of such figures is moreover necessary to offset the power of scepticism, a power particularly mobilized around Kyoto and Copenhagen' (*ibidem*). Apparently, this is not the case in Latvia, where there is neither a call for 'new relations of interdependence' with nature (Szerszynski, 2010: 25), nor a sense of 'cosmopolitan communities of risk' (Beck, 2010: 260). This result is in line with the findings of the previous section, where neither in Bulgaria nor in Latvia, is an environmental motivation expressed to justify energy-related renovations carried out in the apartment or in the entire building.

Environmental knowledge and practices

In Bulgaria

All Bulgarians interviewed shared their concern for nature and the unwise use of natural resources. Even if they did not care about climate change or global environmental issues, they stated that they were trying to organize their new dwelling in a way that would not only ensure their comfort, but also

contribute to low energy consumption and cause minimal harm to the environment.

Examples of how the respondents' behaviour matches those stated beliefs are numerous. The respondents are buying new appliances that use less energy, they are engaging in energy-related renovations, use compact fluorescent lamps (CFLs), try to not waste water when washing or cleaning, avoid leaving the lights on when not needed, etc. Many are also teaching their children and grandchildren to save energy in their everyday lives.

> - I: What do you teach the young?
> - Mr.: They are a different generation now. Yes, a different generation. Economizing (laugh). We teach them they shouldn't leave all the lights on. (Anton and Elena, elderly couple)

> Yes, my husband searches quite thoroughly and only buys appliances (…) of class A, A+ and so on. (Eva, woman, 63 years old, civil engineer.)

> Yes, this has always been important, but it seems a bit more important since I got this dwelling, I try to see that everything that I use is… from the washing detergent, to the cleaning compounds, to (pause) really the electricity, to be as much as possible, well, I try not to waste. Especially, this is especially true for water. I hate to waste water and I, I never use it like that. (Iliyana, woman, 40 years old, school psychologist.)

However, very often informants' behaviour differs from what they have stated. This is especially important for practices regarding the management of energy consumption at home. The interviews in Bulgaria did not reveal many contradictions, as people were careful when speaking to strangers and the interviewers did not have the opportunity to directly observe the respondents over extended periods of time. Nevertheless a few interesting contradictions have been noted.

The most common contradiction comes from informants' declaration of support for energy savings while spending considerable resources to ensure that their homes were warm and comfortable when the weather outside was harsh. A similar case is the respondent who wants to save energy yet buys many electrical appliances to make sure his or her home is comfortable. This discrepancy between behaviour and beliefs is linked to a mentality clearly stated by an elderly couple to the effect that people who have enough do not need to save; savings are done when you cannot afford the comfort you desire. E. g.: *Economies breed misery*. (Anton and Elena, elderly couple.)

Another interesting contradiction, appearing only once, is a contradiction in beliefs. One woman, when talking about specific characteristics of their dwellings, seemed on the one hand to be convinced that energy-related renovations do indeed make a difference:

> In my opinion the energy consumption of a dwelling depends on how it is insulated. (Eva, woman, 63 years old, civil engineer.)

On the other hand, when discussing environmental issues in general and the role of energy and water consumption, she was sceptical about the effect that these renovations have on the environment, probably meaning it in a

global sense (ecosystem):

> A lot has been said about it and that's why we did this insulation thing, to trap heat inside the home and not let it out on the street. Does this somehow influence the environment? I don't know. I am not competent to say. (Eva, woman, 63 years old, civil engineer.)

What can be seen as a contradiction, even if it is not recurrent, is interesting and significant, as it points to a mentality sometimes considered characteristic of Bulgarians. Even if their personal experience has convinced them that a certain practice is good, people become suspicious when that practice is discussed and promoted widely, as is the case with insulating dwellings and replacing old windows. They expect further motivations and wonder who benefits from the media campaign and in the end tend to reject the practice. There is indeed a different perception of the private and the public spheres of life. Whenever the private sphere is concerned, people have greater control over their actions and seem to trust their experience, their friends and family members. On the other hand, when the public sphere is concerned and global issues are discussed, there is a lot of scepticism. Thus this respondent, and probably others, is suspicious of the effect wall insulation has in general, but is convinced of the positive effect when her own dwelling is concerned.

In Latvia

There is no strong connection between knowledge of environmental issues and energy renovation works performed in a dwelling. At the same time people having more information on environmental issues have carried out more energy-related works and practices.

> - Mrs.: I do not know if we are the most saving [people], but at least we are trying to think about it, I think it is good in itself.
> - I.: And what are the practices?
> - Mr.: To switch off the light when [we are – authors' note] leaving the room.
> - Mrs.: To save as much water as possible when I'm washing the dishes. (…), we are using the oven as much as possible at one cooking time. (Evija and Rudolf, young couple, 22 years old, students.)

When talking about environmental knowledge and practices, one main common contradiction was mentioned by the informants: most of them said they care about the environment, but at the same time energy-saving practices are not implemented. It seems that the informants knew or had heard that it was good to act because it positively impacts the environment. So many informants were asserting that environmental issues are important for them, but in reality they were doing little or nothing.

> - I: Do you think that if you consume less energy, you reduce the impact on the environment?
> - Mr: Of course I think about it without stopping. But as we use almost only green energy in Latvia, except that we buy electricity from… I don't remember who we buy the electricity from. I don't know. (Andrejs, man, 34 years old, board member of a company.)

The informants say that the main practices related to environment are energy savings and waste separation.

> - I: What energy saving measures do you implement at home to save

> electricity?
> - Mrs.: I have screwed in CFL's everywhere. Not in the toilet and the bathroom, where they are not used a lot. So I don't know what else. (Gunita, woman, 40 years old, social worker)

Waste recycling was recently implemented in Latvia and is linked to the environment by private organisations promoting environmentally-friendlier life style and by the mass media.

> - I: Do you pay attention to environmental conservation measures?
> - Mrs.: Well, for me those things that I can do myself are important. For instance, I don't like having to throw out glass and plastic bottles out in the same dumpster. For example, we don't have the dumpster close to our house…But I cannot cross the border and throw out the glass [bottle in the same dumpster as plastic – authors' note]. I think that that is somehow… [causing environmental damage – authors' note]. (Anna, woman, 30 years old, journalist.)

The main reason for waste separation is the willingness to live in a green and clean place. Taking care in sorting domestic waste can be interpreted as an extension of the care given to his/her own property rather than as an engagement in improving public areas.

Concluding Discussion

This study on Bulgaria and Latvia drawn from qualitative interviews shows several similarities between the two countries. Old, run-down buildings and feeling colds or discomfort are sufficient levers driving energy-related renovations in privately-owned apartments. Environmental concerns are never expressed as a reason for renovation work, either in Bulgaria or in Latvia, all the more because there is some scepticism and misunderstanding concerning climate change. Building green citizenship in East/Central Europe thus seems to be disconnected from energy-related renovations of the dwelling of Bulgarians and Latvians.

An important issue raised in this analysis is the different perceptions of the private and public spheres of life. While trust and owner-control are the main components in private issues, public issues are generally characterised by lack of control, scepticism, and disinterest. This distinction between the private and public spheres, as well as the limits to grant to the private sphere, are repeatedly found to be relevant issues, for either undertaking energy-related renovations in the common parts of multi-apartment buildings, or for considering global warming and climate models without scepticism. In the private sphere, all informants cherish their homes and do what they can to make it more comfortable, which includes energy-related renovations. Homeownership may enhance this engagement by giving the impression that 'one has a thing to hold to in insecure times', as observed in Romania by Nistor (2007: 11). Furthermore, the individualist counter-ideology has become more and more widespread in former Eastern communist countries in the last decade or so; speaking about Estonia, Keller (2005: 66) notes that 'liberal utilitarianism rapidly became the dominant ideology and society became strongly stratified by income and wealth'.

This political context contributes to explaining why information on climate change is called into question and does not 'fit' with actual representations on life and society. Indeed, if global warming is taken seriously, 'we will all, in a sense, be climate refugees' and 'have to develop new forms of solidarity and security' (Szerszynski, 2010: 25). In this sense, this research in Bulgaria and Latvia leaves open the question of knowing whether the feelings of 'cosmopolitanism' and 'interconnectedness' studied by Beck as a consequence of our knowledge on climate change can develop only in societies 'consuming the Planet to excess' (Urry, 2010) or also in societies characterised by 'scarcity' just a decade ago (Keller, 2005).

In the Bulgarian and in the Latvian interviews, there are ambivalence and mistrust towards science and rationality, climate models being viewed by some informants as 'unrealistic'. But it is precisely 'from the perspective of science, the very basis of Western civilisation' that 'the benign nature of the [economic and political] system' has been called into question, and 'not from the perspective of an oppressed group' (Hamilton, 2010: 99). And 'this 'power of science' is probably unique in the case of mobilizing actions and events around the perceived and looming crisis of global climate change' (Urry, 2010: 194). A few centuries earlier, the scientific revolution had, to the contrary, taught us 'to feel radically separated from the world around us' whereas environmental problems such as global warming invite us for 'reconceptualising the Earth in a way that supersedes the idea that it exists to meet our needs, to accept that it is not a storehouse to be raided at will but our only home' (Hamilton, 2010: 219-220). Put otherwise: 'climate change actually demonstrates and enforces exactly the opposite, namely an ongoing extension and deepening of combinations, confusions and 'mixtures' of nature and society. It makes a mockery of the premise that society and nature are separate and mutually exclusive' (Urry, 2010: 256).

Maintaining unresolved tensions and simultaneously reframing a range of beliefs and values are painful, as shown for the relative egalitarianism of 'the old times' in Estonia by Keller (2005) and for climate change in the United States by Hamilton (2010). This change of perspective is not easy and by saying 'It's profitable for somebody to keep us in panic', one Latvian interviewee poses the same challenge as social science researchers who have 'revealed the complex and 'interested' funding that has supported much of the research that denies the thesis of climate change' (Urry, 2010: 193; the book of Orekes and Conway, 'Merchants of Doubt', illustrates this type of social research quite well).

As Halkier, Katz-Gerro and Martens (2011: 9) underline it, 'culture and social structure may constitute a site of resistance and challenge'. By a mental compartmentalisation (Halkier, 2001; Bartiaux, 2008) of their knowledge on climate change, so that it does not influence their daily lives, and by improving the apartments they own and cherish, namely by investing their efforts in energy-related renovations, Bulgarian and Latvian people are in step with their newly liberal societies.

Notes

[1] Even if Bulgaria and Latvia differ in many characteristics, they are studied here as part of a larger research project (www.ideal-epbd.eu).

[2] The four indicative questions were the following: In your opinions does energy (and water) consumption have something to do with environmental issues? Are environmental issues important or are you tired of hearing about it all? Have you heard of global warming? What do you know about it? The entire question grid can be found in Gosselain and Bartiaux (2010).

[3] According to information from the Investment and Development Agency of Latvia, in the first year of the programme, only 117 applications were submitted and accepted, which corresponds to 13 per cent of the available money for the for multi-apartment building renovation in this programme. Currently, in the first 7 months of 2011, 127 applications have already been accepted and 82 are in the evaluation process.

[4] In 2011, the law requires 2/3 of owners to agree. This change happened in mid-2009, although many informants still do not know about it (Nikolaev, personal communication).

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