TITLE

Towards a better understanding of people's responses to renewable energy technologies: Insights from Social Representations Theory

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1. Introduction

Several governments worldwide are trying to streamline the deployment of large-scale renewable energy and associated technologies (RET)[1] to tackle climate change and following increasingly binding international and European legislation in that regard (Kyoto Protocol, 1998; Renewables Directive, 2009). However, several cases of large-scale RET's[2] siting in different countries have highlighted that this may not be an easy task, since the deployment of those technologies is often met with opposition, leading to projects for the construction of RET being delayed or even withdrawn (Toke, 2005).

Whereas opinion polls tend to show that publics in different countries agree with the importance of generating energy from renewable sources in general, when specific large-scale RET's are to be deployed in particular locations, these are often met with opposition (Bell, Gray, & Haggett, 2005; Wustenhagen, Wolsink, & Burer, 2007). In the last decades, social research has been trying to understand this so called national-local or attitude-behaviour 'gap' (Haggett & Futak-Campbell, 2011), often named as and explained through the 'Not in my backyard' (NIMBY) concept (P. Devine-Wright, 2005; Wolsink, 2006). NIMBY has been used mainly either to describe and pejoratively label people who oppose development (Burningham, 2000; P. Devine-Wright, 2005), to explain opposition through spatial proximity to the developments, and/or to explain opposition as based on individual selfishness, ignorance and irrationality (see also Owens & Driffill, 2008), following a deficit model of the public understanding of science. However, empirical studies have failed

[1] When referring to RET we are also referring to associated energy infrastructures such as high voltage power lines, to which the current proposal also applies.

[2] We will focus on large-scale RET's, as the proposals being here discussed apply specifically to infrastructures of this scale. However, this does not preclude the relevance of SRT and of some of the proposals put forward in this paper to better understand people's responses regarding energy technologies at smaller scales.

to systematically support the NIMBY hypothesis and it started to be criticized (Burningham, 2000; Jodelet, 2001; Wolsink, 2006).

Nevertheless, for a long time NIMBY functioned as the only theoretical framework for the understanding of the attitude-behaviour discrepancy regarding RET and other developments' siting decisions and thus its uselessness as an explanatory framework (Burningham, 2000) has "left a lacuna that needs to be filled" (P. Devine-Wright, 2005, p.196). It has also highlighted other fragilities this literature: the large amount of empirical studies conducted on that, usually using only quantitative-positivist methodologies (Ellis, Barry, & Robinson, 2007; Haggett & Futak-Campbell, 2011), but without stemming from any conceptual framework (P. Devine-Wright, 2005; Walker et al., 2011). Several authors started to stress then the need for a theoretical framework and conceptual tools able to organise this field of research in a more integrative way, and that would recognise the usefulness of different methodologies and disciplines for that (P. Devine-Wright, 2005; Ellis et al., 2007).

Various alternative concepts and explanations to NIMBY have meanwhile been proposed. In a tentative way of systematising these proposals, we may say that they focused on four aspects. First, the discussion of alternative concepts that could critically re-name this area of research - such as 'social acceptance of renewable energy innovation' (Wustenhagen et al., 2007) or, also critical of the concept of 'social acceptance', 'publics' responses to RET' (see Batel, Devine-Wright & Tangeland, 2013) – and with it overcome the abovementioned pejorative representation of publics embedded in the NIMBY concept, since "if researchers use the concept of NIMBY in their research activity, they can also be seen as justifying public opposition in that way " (Batel et al., 2013, p.2). Second, the enlargement of

the scope of analysis from the individual level to more group and societal ones (Bell et al., 2005; Wustenhagen, et al., 2007). For instance, several studies started to demonstrate how factors such as institutional procedures and other project-related factors influence local responses to RET (Bell et al., 2005; Gross, 2007; Wolsink, 2006). Third, accrued attention started to be paid to how other actors – developers, policy-makers – impact on the attitude-behaviour discrepancy (Barnett, Burningham, Walker, & Cass, 2012; Jodelet, 2001; Ellis et al., 2007). Finally, some authors have actually advanced specific theoretical frameworks to explain that gap, such as rethinking Nimbyism as place-protective action arising from perceived threats to place-related identities (P. Devine-Wright, 2009), or using discourse analysis as a "new analytical framework for solving ecological problems" (Haggett & Futak-Campbell, 2011, p.209). Huijts and colleagues (2012) have proposed the adoption of a more individualist, socio-cognitive, framework for explaining, through a predictive and mainly a-contextual model, the psychological factors influencing renewable technology acceptance, while Walker and colleagues (2011) have proposed a framework which highlights the importance of examining the interactions between publics and RET actors, their expectations and relations across time, and the contexts in which those take place.

While these more recent developments highlight that important efforts have been made to support a paradigmatic shift from NIMBY, they also highlight that more integration, namely, at a theoretical level, is needed in this field of research. In fact, and considering the abovementioned proposals, we can see that despite them seeking for more thorough frameworks for understanding public responses regarding RET, they still remain partial in what they take into account for that. For instance, some of

those proposals neglect or relegate to the background the role of developers and decision-makers, their representations about and (power) relations with the publics, in public responses to RET (e.g., P. Devine-Wright, 2009; Huijts et al., 2012). Other proposals dismiss the role played by people's relations with the place where they live and representations about it (e.g., Huijts et al., 2012). More importantly, all these new frameworks fail to discuss and provide an integrative perspective of RET as both a social (Castro, 2012) and a technological (Bauer, 1995; Latour, 1991) new object(s) in contemporary societies, and thus to assume an epistemological approach able to understand the socio-psychological processes involved in their reception by groups and individuals. They fail to connect the analyses of the macro processes involved in social change with the micro processes shaping, materializing and contesting it, in communication and discourse (Castro & Batel, 2008) and, with that, do not acknowledge and analyze the role of the multiple representations and identities that can be used, negotiated, contested by publics, the media, developers and policy-makers, and that shape public's responses to RET.

In this paper we will argue then that for a better understanding of people's responses to RET it is not important to actually understand why the attitude-behaviour discrepancy in those responses exists, but instead what type of socio-psychological processes give it shape and what functions do those serve. In turn, this implies, first, to better conceptualize and situate the promotion of renewable energy generation in its historicity (Giddens, 1979), that is, as an innovation process in contemporary societies (Bauer, 1995; Castro, 2012). Second, to give an account of the socio-psychological processes entangled in social change, specifically, the role played by the relation

between representation, identities and communication in change and resistance to change (Batel & Castro, 2009; Howarth, 2006; Jovchelovitch, 2007).

In the remainder of the text, we will start by situating RET as a social change process in nowadays societies. Then we will discuss how specifically some proposals of Social Representations Theory (SRT; Moscovici, 1961/76), as a theory of social change (Castro & Batel, 2008), can fulfil some of the lacunas left by the before mentioned conceptual frameworks in the understanding of people's responses to RET, while at the same time helping to provide a more integrative framework to this area of research, and one based on a contextual model of public understanding of science (Miller, 2001).

2. Renewable energy at the crossroads of legal and techno-scientific innovation

According with Castro and colleagues (Castro, Garrido, Reis, & Menezes, 2009), environmentalism, as a process of social change, is currently in its Generalisation stage: after its emergence as a social concern mainly through the influence of active minorities, namely grassroots movements (Moscovici, 1976), several treaties and laws at supranational levels (Beck, 2009) institutionalised it while setting specific targets and constraints to the practices of people towards environmental sustainability. Now, mediating systems between the legal sphere and the public one, such as the mass media and community practitioners, are circulating the content of those laws – and specific interpretations of those (Castro & Batel, 2008) -, which are expected to be appropriated by people, so that environmental sustainability can actually be attained.

This highlights that while aiming to understand individuals' and groups' appropriation of those laws, it is relevant to take into account the multilevel system of governance – or governance-beyond-the-state (Swyngedouw, 2005) - that shapes them, within which policies generated at the European or international level are expected to be appropriated at community and individual levels. This implies that generic laws will need to be translated to specific local realities, to which they are usually not adapted to (Castro & Mouro, 2011) therefore having the potential to create conflicts, and that this should be considered when trying to understand people's responses to such laws.

However, there are different sustainability laws, with different characteristics, these having to be considered for a better understanding of the socio-psychological processes the reception of those might involve (Castro, 2012). Regarding the laws for renewable energy generation (e.g., Renewables Directive, 2009), they aim for societies to change from forms of high-carbon energy production to low-carbon and, specifically, renewable forms of energy generation. For the compliance with those laws several models of implementation of renewable energy can be adopted (e.g., Walker & Cass, 2007): for instance, those goals could be achieved through more decentralised models, with a mode of renewable energy production at the household or community level which would 'responsibilize' citizens for the achievement of those goals. However, currently, those policies and legislations are mainly binding for governments, which have to attain certain amounts of renewable energy production at a national level. In turn, these goals are mainly trying to be achieved within the current prevalent model of electricity systems in most countries, that is, a centralised one (Walker & Cass, 2007). Within this model, electricity networks are based on

large-scale infrastructures for energy production - such as coal fired power stations or wind farms -, usually located in remote rural and coastal areas, which are connected to a national grid of transmission and distribution lines responsible for the transport of energy to sites of demand, usually higher in urban and industrialised areas (Butler, 2001)[3].

Therefore, in the last years the number of projects for the construction of large-scale renewable energy technologies and associated infrastructures has substantially increased as compared with previous years (see Department of Energy and Climate Change, 2011). In other words, whereas laws for renewable energy generation are only directly binding for governments, they also affect people when RET and associated infrastructures are deployed, and also while forcing changes in inter-group relations in the public sphere, namely, "between local communities and both governmental experts and the companies proposing the new technologies" (Castro, 2012, p.117).

In this vein, current low-carbon energy production does not only translates the policy-legal sphere's "efforts to lower carbon dioxide emissions" (Castro, 2012, p.106). First, it also materializes specific technological innovations (Bauer, 1995), devised in order to perform that task. While the use of renewable sources for the generation of energy, such as wind or water, is already a very old practice (Poumadère, Bertoldo, & Samadi, 2011), the design, size, and embeddedness at different geographical scales of current infrastructures for the generation of electricity or heat from those sources, namely within centralised models of electricity systems, are new and unfamiliar to most individuals and groups (Poumadère et al., 2011). These new

[3] But see Kingsley (2012) and Carrington (2012).

artefacts are being deployed in specific historical and societal contexts, in which different representations co-exist about energy, space and place, landscape, citizenship and so forth, and where particular individuals and groups will thus attribute distinct meanings to the same technologies (Pinch & Bijker, 1987).

Second, fostering low-carbon energy production is also interdependent with other innovations coming from the policy-legal sphere. The promotion of renewable energy generation is happening at the same time that changes are also being proposed by new legal frameworks aiming to regulate public involvement (Barnett et al., 2012; Castro & Batel, 2008). These laws are directly binding for individuals/groups, and aim to remodel intergroup relations, while seeking that citizens have more voice in decision-making processes and, consequently, that experts and decision-makers do not dominate those entirely (e.g., Aarhus Convention, 1998; Lima, 2004). These laws intend traditional relations between science and the publics to change, from pedagogical to dialogical (Lima, 2004; Wynne, 1996), from representative to deliberative or agonistic (Barry & Ellis, 2011; Mouffe, 2005).

In sum, the promotion of renewable energy production materializes a process of both legal and techno-scientific innovation and, as such, is fostering several changes in public arenas, or, to put it plain, is fostering several conflicts, between old and new ways of thinking and doing - at individual, group and societal levels -, and in the relations between developers, policy-makers and publics, to name but a few. It is crucial then, for a better understanding of people's responses to RET, to reflect upon how people make sense of the new, of change, specifically, by paying particular attention to the role of conflicting representations at individual, group, inter-group and

societal levels in the acceptance of or resistance to change regarding RET. Next, we will discuss how some proposals of SRT can help us with that.

3. The Theory of Social Representations or how to better understand the socio-psychological processes involved in people's responses to change

Social Representations Theory (Moscovici, 1961/76), "by focusing on everyday communication and thinking, hopes to determine the link between human psychology and modern social and cultural trends" (Moscovici, 1988, p.225). Social representations comprise affect, attitudes, beliefs and practices (Jovchelovitch, 1996; Moscovici, 1961/76), and are "socially elaborated and collectively shared" (Wagner, 1994, p.205). The main function of social representations can be said that of turning familiar the unfamiliar (Moscovici, 1988), and thus serve "as symbolic tools which allow group members to make sense of their social world and their relationships to other groups" (Andreouli & Howarth, 2012) and objects, and the main aim of SRT to understand how in nowadays public spheres, composed by a multitude of subjectivities and meanings, different *knowledges* are created, contested and transformed by and for social groups (Howarth, 2006; Jovchelovitch, 1996).

SRT has been extensively used to examine the socio-psychological processes involved in several social change processes (e.g., Lauri, 2009; Wagner, 1994), and mostly those entailing techno-scientific innovation (e.g., Bauer & Gaskell, 1999), but it has not been used regarding RET as a social change process, and one that involves not only techno-scientific innovation, but also legal innovation (e.g., Renewables Directive, 2009; Aarhus Convention, 2001), that shapes how that techno-scientific innovation is to be generalised throughout society. However, it is important to

consider the specificities of different types of social change processes in what regards the socio-psychological processes their reception might entail (see Castro, 2012).

In fact, and even if SRT has also already been used to some extent for examining peoples' responses to RET (e.g., Jodelet, 2001; P. Devine-Wright & H. Devine-Wright, 2006; P. Devine-Wright & Howes, 2010), this research has used only specific ideas proposed by SRT (e.g., anchoring and objectification), and focused mainly on RET as technological new objects being deployed in particular communities/places, or on specific aspects of RET (e.g., representations of wind energy intermittency). In other words, that research has not fully assumed SRT as an epistemology (Markovà, 2003) to understand the socio-psychological processes entailed in people's responses to RET as a social change process, and one involving both techno-scientific innovation and legal innovation. This is especially reflected in the lack of conceptualization and analysis in that research of the three aspects of SRT that will be next discussed.

3.1. Social change processes as the object of socio-psychological inquiry

One of the key tenets of SRT as a theory of social change is the assumption that social change does not imply the simple replacement of old ideas by new ones (Jovchelovitch, 1996). In fact, an insight of the theory is that it proposes that it is not change per se that needs to be understood, but the relation between change and stability – or why despite change being constantly proposed to us in nowadays societies, these remain stable in several regards. In other words, being change a complex process, it often results in the co-existence of competing and even

contradictory meanings, not only within the same culture, society and groups, but also within the same individual (Jovchelovitch, 2007).

Several studies have shown how this co-existence of meanings or cognitive polyphasia allows people to adapt to change (Jovchelovitch & Gervais, 1999) or resist it (Castro & Batel, 2008). Namely, research using the SRT approach to examine different types of legal innovation in the environmental domain, has demonstrated that a particular characteristic of this type of change is that it often results in the un-coordination between ideas and practices (Castro & Batel, 2008; Mouro & Castro, 2012). That is, people will often agree with the laws at the level of ideas – or the normative dimension of representation (Moloney & Walker, 2002) -, but will not act accordingly, at least for some time, in their day-to-day contexts – or the functional dimension of representation (Moloney & Walker, 2012) -, therefore resisting change.

What this research on SRT highlights is that the co-existence of change and stability in our societies is possible because social representations are multi-dimensional phenomena, simultaneously cultural, institutional, contextual/relational and individual (Castro & Batel, 2008). It is this multi-dimensionality that makes them responsive to the spatio-temporal contexts in which they are formed and transformed (Bauer & Gaskell, 1999), and makes us understand that people may agree, in general, with something which is being fostered by laws or has a normative character, and disagree with that same object when it is materialized in proximal/everyday contexts and relations, where other relevant identities and representations are at stake and add new meanings to it.

This clearly resonates with the literature on people's responses to RET: a high support to RET in general and opposition to specific RET, often dubbed as a 'gap' in

this literature. The proposals of SRT show then that this discrepancy is not deviant (Aitken, 2010), moreover when, as discussed before, the laws fostering renewable energy generation are proposed at a macro level and in a way not adapted to the specific national, regional and mainly local realities where they will be materialized through concrete energy infrastructures in particular everyday, proximal contexts/relations.

Thus, the social research on people's responses to RET would benefit of further investigating the different patterns of people's attitudes, beliefs and practices regarding RET and how those impact on promotion, acceptance and resistance of renewable energy production as a social change process. So far, that literature has developed mainly within the assumption that as long as people do not actively oppose RET, they are thus accepting them, and through this RET's will be more easily and quickly deployed (see Aitken, 2010; Batel et al., 2013). However, resistance to change may not only be blatant, as in public demonstrations: it may be expressed in subtle ways (see Moloney & Walker, 2002), or qualified (Bell et al., 2005). In fact, if we consider that social representations are made up of attitudes *and* beliefs *and* practices, even when people do not actively oppose RET this does not necessarily imply that they are not rejecting them. In turn, and as we will further discuss next, this also means that 'practices' do not correspond only to overt 'behaviours', but also to talk or discourse (Billig, 1991) and also that, contrarily to what some authors propose (e.g., Haggett & Futak-Campbell, 2011), not all action is discursive (Castro & Batel, 2008) – sometimes resistance is uncovered through the diagnosis of people's agreement with a given object at the level of discourse, but the absence of overt behaviours putting into practice that agreement.

It would then be fruitful for research on people's responses to RET to explore the role of cognitive polyphasia on those, since it allows "individuals to position themselves both as responsible citizens, and as local residents defending the recognition of local knowledge and local interests" (Mouro & Castro, 2012, p.316/7). So far, research has mainly examined the attitude-behaviour discrepancy regarding RET separately, that is, diagnosing that discrepancy based on national opinion polls on one side – showing public support for RET in general – and on cases of local communities' opposition to specific RET on the other side (Ellis et al., 2007). In other words, the co-existence of different meanings regarding RET has been diagnosed as happening within the same society, but not as much explored within the same communities and individuals. However, for actually understanding how people make sense of RET, more attention has to be paid to how different meanings about RET co-exist, are negotiated and used within the same local communities and by the same individuals, and how those are shaped by the institutional, cultural and contextual/relational dimensions of RET (e.g., Castro & Batel, 2008). In other words, research on people's responses to RET should ask more often 'When?' 'How?' and 'For what purpose?' different meanings are used at societal, group and individual levels.

3.2. How social representations are constructed and transformed

According with SRT, turning familiar the unfamiliar happens through two processes: anchoring, which allows the classification of new social objects into previous and familiar knowledge; and objectification, through which abstract ideas are made concrete, namely through making an image or a metaphor correspond to the

object (Wagner, Elejabarrieta, & Lahnsteiner, 1995). These processes "assimilate and accommodate the new concept to already familiar concepts that are socially constructed and culturally available" (Lauri, 2009, p.649), and allow us to better understand the relation between change and stability in our societies.

These processes give an account of how we cope symbolically with the new and the unfamiliar, be it at a societal level (Wagner, Kronberger, & Seifert, 2002) – for instance, regarding the very idea of renewable energy, that all of us have already re-presented, and for which the processes of anchoring and objectification will be based on more societal, cultural and potentially other group-level resources – or at a local community level – regarding, for instance, the wind farm to be built near the place where I live and of which I will make sense of also through meanings associated with the characteristics and history of that specific place (e.g., P. Devine-Wright & Howes, 2010). H. Devine-Wright and P. Devine-Wright (2009), in a study based on drawing and association tasks, demonstrated how members of two distinct communities in England and Scotland anchored electricity networks through associations with older technologies, such as railways (see also Wibeck, 2012), and objectified them through A-frame high voltage electricity pylons but seen differently - either as "monstrous, eyesores" (more prevalent in Beauly, Scotland) or "as girls with whips striding across the countryside" (Leicester, England) (p.367-8), depending on how they represented the place where they lived.

Individuals re-present objects dialogically then, that is, in the relation with the Other, imagined or real, present or distant – other individuals, communities, groups, culture (Jovchelovitch, 1996; Marková, 2003). In turn, this means that social representations are created and transformed through communication unfolding at

different levels or through different modes and mediums (Bauer & Gaskell, 1999): through the mass media, the educational system, conversations in pubs, or daydreaming, through bodily movement, visual images, words.

What are the implications of these aspects for the analysis of people's responses to RET as a social change process? First, that it is important to examine relations (Elcheroth, Doise & Reicher, 2011) and not isolated individuals (Huijts, et al., 2012). In fact, when there is opposition against a given techno-scientific innovation, those opposing it may not be opposing or questioning the object in itself, but rather the assumptions others make about them and their relation with that object, namely, those developing those innovations – which, in turn, will impact on people's responses to the technology *per se*. In other words, responses to RET need to be examined as social representations, that is, as co-constructed, relational, contextual, dynamic and rhetorical meaning-making, rather than as individual endeavours, that is, individual, cognitive and universal information-processing tasks. In this vein, and second, more attention should be paid to the analysis of discourse and communication (Billig, 1991) within and between individuals, groups and society, and related methodologies (Cotton & P. Devine-Wright, 2010; Ellis et al., 2007).

In an associated way, the very object of study of this area of research – 'people's responses to RET', usually meaning 'lay sphere responses to RET' (e.g. Huijts et al., 2012) – needs to be broadened. If we want to understand common sense understandings of RET and if these are constructed in relation with the Other, it is crucial to also examine the latter – developers, policy-makers, the media, researchers' representations of RET and of the public. Namely, research should further analyse the communication between expert and lay spheres regarding RET targets and related

public engagement laws, and the impact that the communication between these groups may have on each other (Andreouli & Howarth, 2012; Batel & Castro, 2009) and on specific public understandings of and responses to RET. Particularly, because the inter-group relations between those groups are still shaped by "institutionalized relations of knowledge and power" (Bickerstaff, Lorenzoni, Jones & Pidgeon, 2011, p.493) that can impact on public responses to RET, as will be further developed below.

Also the analysis of the representations circulated in the mass media at different levels – national, regional, local – regarding RET and the new renewable energy targets has been rather neglected so far (see H. Devine-Wright, 2011; Haggett & Futak-Campbell, 2011, for exceptions), but it would be crucial for better understanding people's attitudes, beliefs and practices regarding RET. The mass media are one of the most important actors in shaping lay representations (Bauer & Gaskell, 1999) and a relevant indicator of the cultural dimension of representations.

More frequent analyses of institutional contexts and arrangements should be performed as well, such as through the examination of public policy documents, and the representations of the public, local communities and the promotion of renewable energy those convey (Elcheroth et al., 2011), since those are media held by powerful actors to impose and reify representations (Andreouli & Howarth, 2012; Bickerstaff et al., 2010).

3.3. The relation between representation and identities and their impact on change and resistance to change

So far, with the help of SRT, we have acknowledged that social change often results in the co-existence of competing meanings (Jovchelovitch, 2007). In turn,

assuming this within SRT makes it crucial to also analyse how those different meanings are related with specific identities: these help us understand the processes that give shape to social representations (Breakwell, 2001; Jovchelovitch, 1996). In other words, to better understand people's responses to RET it is crucial not only to examine how people re-present RET but also how this process is shaped by specific identities. However, more than that and as already suggested before, current research on publics' responses to RET would benefit from further integrating two particular tenets of SRT regarding the relation between social representations and identities and its impact on change and resistance to change: first, that social representations do not exist only within the lay sphere (Andreouli & Howarth, 2012) – developers, policy-makers, experts, the media, also construct those and are usually more powerful in making their representations prevalent over those circulating within the lay sphere; which in turn, and, second, makes it crucial to consider that not all social representations are equally valued or have the same legitimacy in society (Batel & Castro, 2009). In turn, this adds a new layer to the analysis of social representations: power relations.

Representations do not differ only in their content, but also in their type – they can be more or less pervasive or hegemonic (Moscovici, 1988), they can be more or less legitimised in societies (Howarth, 2006), and these differences are related with specific identities. In other words, we must acknowledge that not all representations and associated identities are equally powerful, and the NIMBY literature makes a good case for illustrating this, while revealing how experts and decision-makers are often able to exclude local communities' perspectives from the decision-making processes affecting them (Burningham, 2000). Then, we cannot try to understand

public responses towards RET without looking at how those responses are impacted by who is on the other side of those technologies, and without examining how each side is "attempting to express and defend its social identity" (Wynne, 1996, p.39).

The existent social research on people's responses to RET has also already started to explore to some extent other actors' representations of RET and associated issues (Barnett, et al., 2012; Cotton & P. Devine-Wright, 2010; Walker et al., 2011). It is relevant to further perform this type of analyses and, specifically, to better articulate that with the analysis of local communities' responses to RET projects, moreover when, currently "on the one hand public agencies must seek to involve and respond to the views of the public. On the other, they will seek to promote and fulfil central and local political and bureaucratic agendas" (Barnett et al., 2012, p. 37).

But identity processes are as much important to understand expert's discourses and representations regarding the promotion of renewable energy production and public engagement issues, as they are for better understanding 'lay' people's representations of those. P. Devine-Wright (2009)has been describing the role played by place identities on local communities' responses to RET. It is crucial then to examine how representations of the rural (Halfacree, 1993), the countryside or seaside (P. Devine-Wright and Howes, 2010), of the places where people live, and associated identities, are used to make sense of particular technologies in specific places, and of the laws and policies responsible for that.

4. Conclusions and Discussion

Governments worldwide are fostering the production of renewable energy, mainly through the deployment of large-scale infrastructures, following increasingly

binding legislation in that regard (Kyoto Protocol, 1992; Renewables Directive, 2009). However, and despite the public supporting renewable energy generally, the deployment of those infrastructures is often met with opposition from the local communities where they are constructed (Bell et al., 2005). This phenomenon, often dubbed as the attitude-behaviour or national-local 'gap' on people's responses to RET, has been often explained through the NIMBY framework, encompassing a deficit model of the public (Wynne, 1996). More recently though, several authors started to criticize NIMBY and set out to better understand local opposition to RET (Wustenhagen, et al., 2007). However, the new frameworks proposed fail to discuss RET as both a social and a technological innovation in contemporary societies, and thus to discuss the socio-psychological processes involved in their reception. In turn, and while focusing on the attitude-behaviour 'gap', they perpetuate a conception of that discrepancy as a paradox, and local opposition to RET as something which has to be 'fixed' (Aitken, 2010).

In this paper we proposed then that for actually better understanding the how, why and what for of people's responses to RET, and overcoming a deficit model of public understanding of RET, this area of research could benefit, first, from better situating the promotion of renewable energy production in nowadays societies, namely, as a legal and techno-scientific innovation process. In turn, and second, conceiving people's responses to RET within that broader perspective highlights the relevance of considering socio-psychological approaches to how social change happens or how do people make sense of new social objects.

We argued that Social Representations Theory (Moscovici, 1961/76) could be useful for providing such a conceptualization. One of the main tenets of this theory is

that it proposes that social change does not simply imply the substitution of old ideas by new ideas but, instead, that it often results in the co-existence of conflicting meanings within the same society, group and individual, during a certain period of time. In other words, the attitude-behaviour discrepancy in people's responses to RET is not to be considered as deviant, but instead as natural, if we conceive people as 'polyphasic'and agentic while trying to "feel at home, secure from any risk of friction or strife" (Moscovici, 1984, p.24) in their everyday lives. Thus, it is not important to actually understand why the attitude-behaviour discrepancy exists, but instead to better understand what type of socio-psychological processes give it shape and what functions do those serve. In this vein, we have also specifically discussed how the proposals of SRT regarding how social representations are constructed and transformed, and the role that cognitive polyphasia, identities and power relations have in that, are crucial to better integrate in future research within the literature on public responses to RET.

Among the areas of future research we would mainly stress the relevance that SRT can have on two aspects of people's responses to the promotion of RET. First, the analysis of how different patterns of beliefs, attitudes and practices regarding RET and public participation emerge, not only within the same society – the focus of that literature so far – but also within the same group/individual.

Secondly, the systematic examination not only of the public or lay sphere understandings of RET and public engagement, but also of other key social actors – developersdecision-makers, the media – and, specifically, the articulated analysis of how the communication between those groups impacts on different responses to RET-related change. This calls for accrued attention to be paid to the integrated analysis of

communication, representational and identity processes, which takes into account how cultural, institutional, contextual/relational dimensions interact between and within social agents and shape the fostering of RET as a social change process happening at different geographical scales.

Finally, adopting SRT proposals to investigate people's responses to RET can also contribute in important ways to develop SRT. For instance, while furthering our understanding of communicative strategies for resistance to change and, through that, fostering social representations' theorization of conflict and argumentation (Castro & Batel, 2008, p.481) and of the socio-psychological processes contributing for the relation between change and stability in nowadays societies. But it can also foster a better understanding of other types of responses to change than the typically researched acceptance or resistance to change (as in Castro, 2012; Wustenhagen, et al., 2007) and, specifically, those described as 'acceptance' which in fact often refers to different kinds of reactions to change, such as support, acceptance and arguably others, that are important to disentangle, as they can have different consequences for the sustainable deployment of RET (see Batel et al., 2013).

Some of the literature on people's responses to RET can also fruitfully develop SRT's theorization of two aspects that have been neglected in it: the role of space and place in social representation (see P. Devine-Wright, 2009) and the political dimension of representation and identities (see Jones, Jones & Woods, 2004; Swyngedouw, 2005). In fact, on one hand, research on social representations has mainly examined them as societal or cultural phenomena, and neglected more how social re-presenting happens at other, smaller, scales, intertwined with representations of more specific spaces and places. On the other hand, SRT's research has often been

criticized by not explicitly theorizing how power relations shape the possibilities for social re-presenting (Batel & Castro, 2009) or how politics, the institutions and technologies of governing (Foucault & Rabinow, 1984; Swyngedouw, 2010), constitute the relations between representation and identities (Andreouli & Howarth, 2012). More importantly, SRT's research and specifically the one examining 'socio-environmental' change (e.g., Castro, 2012), has not often critically discussed the very 'rationalities' that base the definition of (environmental) problems and solutions for those or, in other words, to consider the "radically differentiated if not opposed social, political or ecological desires" (Swyngedouw, 2010, p.223) that are behind institutionalization efforts of 'environmental sustainability' - but also of 'multiculturalism', 'active ageism' and so forth (see also Elcheroth et al., 2012). In an associated way, it would be important for SRT' research to go beyond the focus on 'dialogical consensual practices' (e.g., Batel & Castro, 2009; Jovchelovitch, 2007) and focus more on how to integrate antagonism and dissent in the understanding of social change (Mouffe, 2005).

In sum, the combination of insights of Social Representations Theory with proposals of the literature on public responses to RET can help us to move towards a better understanding of those responses. In turn, this is crucial for the deployment of RET to happen in a sustainable democratic way, one that recognizes and incorporates all the diverse, conflicting and variegated existent representations, identities and discourses about renewable energy.

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