

Rethinking NIMBYism: The Role of Place Attachment and Place Identity in Explaining Place-protective Action

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ABSTRACT

The 'NIMBY' (Not In My Back Yard) concept is commonly used to explain public opposition to new developments near homes and communities, particularly arising from energy technologies such as wind farms or electricity pylons. Despite its common use, the concept has been extensively critiqued by social scientists as a useful concept for research and practice. Given European policy goals to increase sustainable energy supply by 2020, deepening understanding of local opposition is of both conceptual and practical importance. This paper reviews NIMBY literature and proposes an alternative framework to explain local opposition, drawing upon social and environmental psychological theory on place. Local opposition is conceived as a form of place-protective action, which arises when new developments disrupt pre-existing emotional attachments and threaten place-related identity processes. Adopting a social constructivist perspective and drawing on social representation theory, a framework of place change is proposed encompassing stages of becoming aware, interpreting, evaluating, coping and acting, with each stage conceived at multiple levels of analysis, from intrapersonal to socio-cultural. Directions for future research and potential implications of the place-based approach for public engagement by energy policy-makers and practitioners are discussed. Copyright © 2009 John Wiley & Sons, Ltd.

Key words: NIMBY; place attachment; place identity; renewable energy; social representations

INTRODUCTION

This paper aims to critically review literature on the 'NIMBY' (Not In My Back Yard) concept and propose a new psychological framework rethinking NIMBY responses as place-protective actions, founded upon processes of place attachment and place identity. The paper is in three main sections. The first two sections review literatures on place and NIMBYism, arguing that the literature on place has neglected important symbolic and affective aspects of place-related action, while the NIMBY literature has tended to discount

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explanations at the individual level of analysis. Addressing both issues, the third section applies theories of social representation (Moscovici, 2000) and identity threat (Breakwell, 1986, 1992) to propose a multi-stage, multi-level framework to explain place-protective action.

THE CONCEPT OF PLACE

Place is a concept traceable to the work of Aristotle and of importance to environmental psychology, architecture, geography and sociology. A commonly agreed principle is that 'place' differs from related concepts such as 'space' or 'environment' in describing physical aspects of a specific location as well as the variety of meanings and emotions associated with that location by individuals or groups (Gieryn, 2000; Tuan, 1977). Regardless of discipline, it is a distinctive way of thinking about social research that stresses 'emplacement', in which physical and spatial contexts are more than mere backdrops to social and psychological phenomena (Bonaiuto, Carrus, Martorella, & Bonnes, 2002; Cresswell, 2003; Gieryn, 2000).

However, the literature on place has been described as incoherent (Stedman, 2003), arising from the diversity of approaches adopted by researchers (Patterson & Williams, 2005), including phenomenology (Norberg Schultz, 1980), symbolic interaction (Milligan, 2003), discourse analysis (Dixon & Durrheim, 2004) and social cognition (Stedman, 2003). Although some psychologists have conceived place holistically (Canter, 1977, 1997; Gustafson, 2001), many have adopted a more analytic focus, the most notable of which are literatures on place attachment (Altman & Low, 1992) and place identity (Proshansky, Fabian, & Kaminoff, 1983).

Place attachment

Place attachment has been defined as both the process of attaching oneself to a place and a product of this process (Giuliani, 2002). As product, place attachment is a positive emotional connection with familiar locations such as the home or neighbourhood (Manzo, 2003, 2005), correlating with length of dwelling (Brown & Perkins, 1992), featuring social and physical sub-dimensions the relative importance of which may vary (Hidalgo & Hernandez, 2001) and leading to action, both at individual and collective levels (Manzo & Perkins, 2006).

Although rather individualistic approaches to place are common in environmental psychology (Bonaiuto & Bonnes, 2000), on occasion more socially and spatially extensive characterizations of place attachment have been advocated. These include Inalhan and Finch's (2004) study of workplace attachment, distinguishing between individual, interpersonal and organizational levels; Brown, Perkins and Brown's (2003) study of neighbourhood attachment, distinguishing residence, block and neighbourhood levels; and Manzo and Perkins' (2006) 'ecological framework' of community planning, proposing individual, group/organization, neighbourhood and city/region/society levels. Each echoes Canter's (1997) holistic framework of place that encompasses different spatial scales, a point also made by geographers that have argued for less bounded conceptions of place – as a nodal point within a complex web of social interactions which may stretch over local, regional and national boundaries (Massey, 1995). In tandem with these comes a stronger

emphasis upon the socio-political aspects of place (Manzo, 2005), where attachments are understood to be influenced by group level interests, which can lead to negative experiences of familiar places and sometimes the desire to leave or escape.

Place identity

'Place identity' refers to the ways in which physical and symbolic attributes of certain locations contribute to an individual's sense of self or identity (Proshansky et al., 1983). Following on from Proshansky and colleagues' rather structuralist approach, later studies have drawn on theories of social identity (Bonnes, Giuliani, & Bonaiuto, 1995), identity processes (Twigger-Ross & Uzzell, 1996), social cognition (Stedman, 2002) and discourse (Dixon & Durrheim, 2000, 2004). These differ in their methodological approach, as well as their focus upon personal attitudes (e.g. Stedman, 2002), rhetoric (Dixon & Durrheim, 2000) and social (Bonnes et al., 1995) or process aspects (Twigger-Ross & Uzzell, 1996) of the self.

Bonnes et al. (1995) revealed how a place such as Rome can represent both personal and social aspects of the self, distinguishing between 'personal place identification' (e.g. 'Rome has become a part of me') and 'social place identification' (e.g. 'I feel completely Roman'). Stedman's (2002) socio-cognitive approach is more individualistic, investigating how attitudes and evaluations lead to behavioural intentions. Identity process theory (Breakwell, 1992) focuses upon the work of four principles (self-esteem, self-efficacy, continuity over time and distinctiveness from others) that guide a sense of self over time. Studies have revealed how individuals and groups draw on ties with, and interpretations of, specific places, guided by identity principles (Devine-Wright & Lyons, 1997; Knez, 2005; Twigger-Ross & Uzzell, 1996). The discursive approach emphasizes the significance of language in constructing reality. Applied to place identity, discursive studies have a particular interest in the political aspects of how meanings are communicated and contested between individuals and groups with different interests (e.g. Dixon and Durrheim, 2004).

Place disruption

The impact of change has been a persistent interest of researchers, sometimes labelled as 'disruption' to place attachment (e.g. Brown & Perkins, 1992) or 'threat' to place identity (e.g. Bonaiuto, Breakwell, & Cano, 1996). In both cases, studies have revealed how change can make explicit the bonds between person and location that are typically latent (Brown & Perkins, 1992), resulting in emotional responses such as anxiety and loss (Fried, 2000), and a sense of displacement that can lead to psychiatric trauma (Fullilove, 1996). The causes of disruption vary, from ecological change such as floods or landslides (Brown & Perkins, 1992), to human-induced change such as burglary (Brown & Perkins, 1992), demolition of homes and neighbourhoods (Fried, 2000; Speller, 1999), voluntary migration (Brown & Perkins, 1992), workplace relocation (Inhalan & Finch, 2004; Milligan, 2003), neighbourhood decline (Brown et al., 2003) and intergroup conflict (Dixon & Durrheim, 2000; Possick, 2004).

Disruption affects not only the physical aspects of places but also the social networks that are sources of support to individuals, particularly in low-income communities (Fried, 2000). Disruptive change can be gradual, derived from political or economic processes, for

example when environmental management practices proclaim local beaches are polluted (e.g. Bonaiuto et al., 1996) or when spatial planning decisions lead to an influx of unwanted 'outsiders' into a place (Dixon and Durrheim, 2004). Therefore, disruption to place is characterized by extent, rapidity and control, and unfolds over time as individuals make sense of what has happened or is about to happen, and attempt to cope accordingly.

In terms of temporal unfolding, both Brown and Perkins (1992) and Inhalan and Finch (2004) propose three-stage models of place disruption, distinguishing between pre-disruption, disruption and post-disruption phases hinging on a particular event. According to Brown and Perkins (1992), pre-disruption can involve a person preparing for change by anticipating possible futures, for example by imagining the act of departure in cases of voluntary migration. The second stage is the disruptive event itself, triggering the negative emotional consequences typical of disruption such as anxiety, grief and loss (Fried, 2000; Fullilove, 1996). The third stage involves coping with change by seeking to form new place attachments, for example following temporary or permanent relocation. Inhalan and Finch's (2004) account specifically focuses upon affective aspects of workplace change. They trace a trajectory of 'emotional volatility' over time, from pre-move feelings of shock and denial, to move-specific feelings of anger and depression, to post-move acceptance of change.

Both models usefully address how disruption unfolds over time. However, they overlook how change is interpreted and argued over in a social milieu, arising from interpersonal communication and exposure to media sources. They also tend to reify disruption, overlooking that change may be psychologically disruptive before any physical change is manifest. The centrality of social processes of interpretation for place disruption is perhaps most easily identified when change is less rapid, in which individuals and groups have sufficient time to become aware of, interpret and respond to potential change. In such cases, 'disruption' does not necessitate actual physical change to a place, but psychological anxiety or a sense of threat at the possible outcomes of future change.

Place disruption can lead to specific behaviours. Stedman's (2002) study of planned new housing in a lakeshore area of Wisconsin revealed the importance of certain meanings in shaping behavioural responses. Seeking to explain residents' willingness to engage in 'place-protective' actions (i.e. voting for new laws or joining a protest group), the results showed how opposition was contingent upon strong place attachments and the adoption of specific meanings: interpreting the place as 'up north' rather than as a 'community of neighbours' (pp. 570–571). Stedman concluded 'we are willing to fight for places that are central to our identities .. this is especially true when important symbolic meanings are threatened by prospective change' (p. 577). Stedman's work is weakened by a lack of emphasis upon emotions and the inability of the socio-cognitive approach to explain place-related meanings. Stedman himself recognized that 'the source of cognition is a relative mystery using this framework and data. More research is needed on the source of symbolic meanings' (Stedman, 2002, p. 577).

To do this requires a shift in analytic gaze away from the individual as the sole point of reference towards a multi-level approach, premised on the assumption that knowledge is collectively constructed through interactions among individuals and between individuals and the institutionalized structures that make up society (Wagner & Hayes, 2005). Social representations theory (Moscovici, 2000) provides such an approach, addressing aspects of content, process and power in the construction of knowledge, encompassing individual and social aspects of knowledge construction (Moloney & Walker, 2007) that is rendered via processes of anchoring (the connecting of new ideas to familiar knowledge) and

objectification (the making concrete of abstract ideas). It is also useful for understanding how change to the context of individuals' lives can lead to perceptions of threat, implicating identity processes (Timotijevic & Breakwell, 2000).

Social representations theory offers a useful approach to study how proposed changes to a place engenders communication about the impacts of change upon the physical environment as well as upon the individuals and groups who live, work or visit the place, leading to the adoption of specific attitudes and behavioural responses. Research informed by social representations theory can investigate how proposed place changes are interpreted (via anchoring and objectification), evaluated (as threat or opportunity) and contested amongst individuals and between individuals and organizations, mindful of the unequal power relations between different actors. Whilst the theory has been applied to the study of environmental concern (Castro, 2006), it has yet to be applied to the study of disruption to place. Such an application has the potential to extend the theory of social representations, which to date has typically neglected the 'emplacement' of social phenomena (Gieryn, 2000). Before describing how social representations theory may be applied to place disruption in more detail, it is useful to describe perhaps the most common way of understanding resistance to place change: NIMBYism. This is explored below within a particular, policy arena: the deployment of renewable energy technologies.

NIMBY OPPOSITION TO ENERGY TECHNOLOGIES

The term 'NIMBY' refers to public opposition to unwanted local developments, ranging from landfill waste dumps to energy projects such as wind farms (Burningham, Barnett, & Thrush, 2007). Energy projects are of particular interest, since countries across Europe have committed to increasing the proportion of energy derived from renewable energy resources to respond to climate change (Barroso, 2008). Although numerous opinion polls have indicated public support for more renewable energy (McGowan & Sauter, 2005), actual developments have often been met with opposition, which has typically been described as 'NIMBYism', leading to delayed or even abandoned projects (Toke, 2005). This difference between high levels of general public support and contested local projects is a critical issue influencing the trajectory of renewable energy in Europe generally and the UK specifically (Toynbee, 2007).

NIMBY has been commonly used both to describe and to explain local opposition: 'In plain language . . . [NIMBYs are] residents who want to protect their turf. More formally, NIMBY refers to the protectionist attitudes of and oppositional tactics adopted by community groups facing an unwelcome development in their neighbourhood . . . residents usually concede that these "noxious" facilities are necessary, but not near their homes, hence the term "not in my back yard"' (Dear, 1992, p. 288). The concept has a range of meanings encompassing description and explanation. Firstly, NIMBY describes and pejoratively labels people who oppose development, providing a 'succinct way of discrediting project opponents' (Burningham, 2000, p. 55). For example, in a recent UK newspaper article, it was argued that 'Wind farms (are) now trapped in planning hell by local NIMBYs . . . NIMBYs can't be allowed to put a block on wind farms' (Toynbee, 2007). Researchers interested in its use as a label tend to adopt a constructivist epistemology and employ qualitative methods to reveal the discourses characterizing communication between different actors in renewable energy conflicts – project developers, local opposition groups, planning authorities, and environmental groups (Barry,

Ellis, & Robinson, 2008; Ellis, Barry, & Robinson, 2007; Haggett & Smith, 2004). These studies reveal how opponents rebut the NIMBY label using disclaimers (e.g. 'I'm not against wind power, but . . .'; Haggett & Smith, 2004, p. 10), to claim support for renewable energy generally, but not that particular development.

NIMBY has also been used as a spatial explanation for opposition, assuming the proximity between a person's home and the site of a proposed development to be the most significant factor influencing response. Researchers interested in the spatial explanation have adopted a positivist empirical approach, utilizing research designs and questionnaire methods to systematically sample the opinions of residents living at varying physical distances (e.g. up to 5 km; 5–10 km; 10–20 km, Warren, Lumsden, O'Dowd, & Birnie, 2005). Generally, these studies have tended to disprove the assumed spatial determinism, with results revealing that residents living closer to developments have more positive views than those living further away, what has been described as an 'inverse NIMBY syndrome' (Warren et al., 2005, p. 866). Some local people actually prefer development to take place in their locality in comparison to other regions (e.g. Wolsink, 2000) and opponents often hold views better described as 'Not In Anyone's Back Yard' in comparison to the 'NIMBY' position (Hoepman, 1998).

Thirdly, the NIMBY concept has been used as an explanation for opposition that is determined at the individual level by ignorance, irrationality and selfishness (Burningham et al., 2007). It is presumed that opposition is based upon a lack of full knowledge of the problem or technology in question, an assumption labelled the 'information deficit' perspective (Owens, 2001). According to this view, if such deficits could be properly remedied, and if the 'facts' of the issue could be separated from the 'myths' (Devine-Wright & Devine-Wright, 2006), then levels of opposition should fall. However, researchers have been highly critical of this assumption, using qualitative methods to show that individuals opposing developments are often highly informed and cannot be presumed ignorant (Petts, 1997). Furthermore, the value of the self-interest explanation has been contested (Bell, Gray, & Haggett, 2005) since it is based upon rational choice presumptions that overlook the importance of issues of justice, equity and trust in energy conflicts (Gross, 2007; Upham & Shackley, 2006).

Across the strands of 'NIMBY' research, disagreement exists as to what exactly the focus of research should be trying to explain (Hubbard, 2006; Wolsink, 2006). As Dear's (1992) quotation makes clear, the NIMBY concept unhelpfully muddles whether opposition should be conceived as a belief or attitude towards a development, a behavioural response taken by individuals or the collective actions of organized groups. Each one of these is a fruitful avenue for research, but need to be better distinguished in the literature. Researchers also need to avoid conflating responses to proposed and actual developments, as it has been suggested that those living close to proposed developments are least likely to be supportive, since they are most directly affected by it, whilst those living closest to existing developments are most likely to be supportive, since their personal experience may make them more familiar with the technology in question (Van der Horst, 2007). However, levels of familiarity are unlikely to be derived solely from direct experience, and a more constructivist approach to social knowledge would emphasize how familiarity arises from mediated experience, for example, exposure to mass media sources or interpersonal communication.

These confusions in the NIMBY literature, coupled with the pejorative nature of the concept, has led some researchers to recommend that the concept be used more carefully (Burningham, 2000; Devine-Wright, 2005) or abandoned altogether (Wolsink, 2006).

Geographers and sociologists have argued that opposition is best explained not by 'NIMBYism' but by concepts of institutional capacity and procedure (Wolsink, 2007) or the study of inter-subjectively constructed discourses (Ellis et al., 2007). However, these perspectives are only partial explanations of opposition, and the rejection of the NIMBY concept does not invalidate the legitimacy of individual level explanations and the importance of psychological processes such as emotional responses, meaning making and action. Accordingly, the central thesis of the paper is that so-called 'NIMBY' responses should be re-conceived as place-protective actions, which are founded upon processes of place attachment and place identity. This enables a deeper understanding of the social and psychological aspects of change arising from the siting of energy technologies in specific locations.

RETHINKING NIMBYISM AS PLACE-PROTECTIVE ACTION

The literatures on disruption to place attachment and threats to place identity suggest strong overlaps, with both involving negative emotional responses and forms of coping with change adopted by individuals in difficult situations, such as denial. When taken together, these suggest a fruitful basis for explaining psychological aspects of 'NIMBYism', where such opposition is conceived as attempts to prevent forms of change interpreted as disrupting place attachment and threatening place identity.

Few empirical studies have addressed links between place attachment, place identity and public opposition to energy technologies. One exception is Vorkinn and Riese's (2001) study of local people's attitudes towards a proposed hydropower project in Norway. Using a questionnaire method, their results indicated that place attachment significantly explained attitudes to the development, explaining more variance than socio-demographic variables. The more attached residents felt towards the affected area, the more negative beliefs were expressed about the proposal. The study empirically demonstrated the role of place attachment in explaining negative public responses; however, it left a number of gaps, notably whether respondents with strong place attachment felt threatened by the project, how the project was interpreted, how evaluations of threat arose over time, and to what extent negative attitudes may or may not lead to active opposition.

To progress these aspects and provide a basis for future research, a framework for understanding individual responses to place change is proposed that comprises multiple levels of analysis, ensuring the emplacement (Gieryn, 2000) of the individual in social and spatial contexts, and possesses multiple stages to explain responses over time. This is achieved by linking environmental psychology theory on place with social psychological theory on social representations and identity processes. The stages include becoming aware, interpreting change, evaluating change as threat or enhancement, coping responses and, in certain circumstances, behavioural resistance or support (see Figure 1).

Knowing and interpreting place change

In the existing literature on disruption to place attachment, people become aware of change mainly through direct experience, when their locality or home is literally and immediately transformed through burglary or landslides. In the context of energy projects, planning procedures may take several years before final decisions are reached, and development

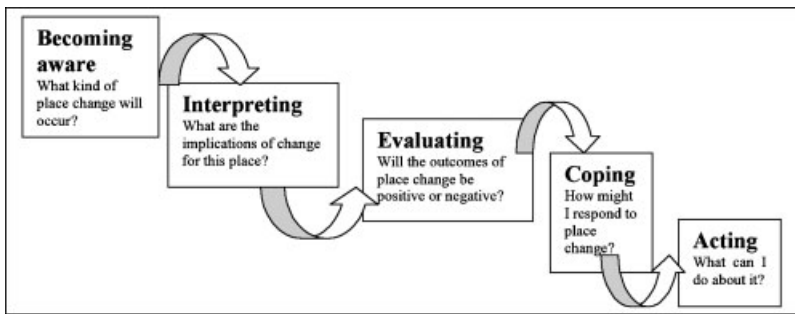


Figure 1. Stages of psychological response over time to place change.

actually begins. In such contexts, ‘knowing’ or becoming aware of change is likely to be mediated by communication with trusted others and the media, and consequent upon the actions of private companies making public their proposals, typically by means of public consultations or engagement processes.

Following awareness, there is likely to be a period when individuals strive to make sense of change, when symbolic ideas concerning the development are taken up and communicated by local media and communicated inter-subjectively by local people. This process is likely to involve argumentation and contestation, as individuals and groups with different interests take sides in support or opposition to place change. Political aspects of place attachment and identity (Dixon and Durrheim, 2004; Manzo, 2005) are relevant to the stage of interpretation, as the ability of different individuals and groups to contest the rationales, procedures and consequences of planned changes will be unequal, particularly in contexts where local residents attempt to oppose development proposals instigated by large multinational companies.

The stage of interpretation can be understood using social representations theory (Moscovici, 2000), in which processes of anchoring and objectification explain how the unfamiliar is made familiar. The dialogical approach to social representations (Markova, 2003) emphasizes the significance of contradiction, particularly the prevalence of oppositional dyads or themata. These have been shown to be relevant to energy technology controversies, notably in argumentation over ‘facts’ and ‘myths’ in debate on wind energy (Devine-Wright & Devine-Wright, 2006) and are suggested by the contrast made between ‘industrial’ or ‘man-made’ energy technologies and ‘natural’ or ‘wild’ places in contexts of local opposition (e.g. Kempton, Firestone, Lilley, Rouleau, & Whitaker, 2005).

Place and the interpretation of change

Place is implicated in becoming aware of and interpreting change in a number of ways. Firstly, places are social constructions only to a degree (Stedman, 2003). Places objectively differ in terms of their environmental, social and economic characteristics and these will open up or close down the possibilities open to individuals and groups to interpret proposed place changes (Van der Horst, 2007). Secondly, place attachment is likely to influence the process of representation. Strongly attached individuals would be expected to take an interest in what is going on locally, and to talk about and potentially take action to deter unwanted forms of change. By contrast, individuals who feel more weakly attached to a

place, for example those who feel a sense of 'alienation' or negative attachment to that place (Manzo, 2005), may feel less motivated to attend to and engage with proposed change, and more indifferent about the outcomes of technology siting.

Whether place attachment necessarily leads to negative evaluations of place change is contingent upon the form and intensity of attachment, as well as the interpretation of change. Although Vorkinn and Riese's (2001) results indicated a negative relation between place attachment and attitudes to a proposed energy project, place attachment may actually positively correlate with project support when projects are interpreted as place enhancing. The type of attachment is also relevant. Where the object of attachment is more social than physical (Hidalgo & Hernandez, 2001), that is a feeling of belonging with the local community rather than attachment to the local environment *per se*, interpretation about whether the project will directly enhance the local community, rather than its environmental impacts, will predominantly influence public responses. Stedman's results (Stedman, 2002) showed that those who held symbolic beliefs about the lake area as a 'community of neighbours' were less likely to oppose development, regardless of their strength of place attachment. Finally, interpretation implicates inter-relations between places at different scales, notably the local/global dimension and arguments about climate change (Haggett, 2008). In this context, interpreting energy projects as occasions when local places must be 'sacrificed' in order to deal with climate change (Ellis et al., 2007) may be counterproductive, serving to stimulate a sense of threat in those strongly attached to the locality.

Evaluation, coping and behavioural responses

Beliefs about energy projects can be conceived in two dimensions: about the *process* of decision-making and the *outcomes* of development (Walker & Devine-Wright, 2008). Interpreting energy projects in terms of unjust planning procedures and negative outcomes is likely to lead to negative affect and evaluations by those individuals who feel strongly attached to the place. Such individuals are likely to evaluate change as a threat to place identity in cases where projects are believed to have significant and relevant impacts, and to be negative and immediate (Breakwell, 1992). Projects may be interpreted to threaten place-related *positive distinctiveness* when the technology is believed to symbolize contradictory or 'alien' meanings that 'weaken local character' (Brittan, 2001) or stigmatize a place (Wester-Huber, 2004). Projects may threaten place-related *continuity over time* by altering the way individuals' experience cherished, familiar places. One of the ways in which this may be manifest, and yet has received insufficient research, is how disruption can alter the sensory qualities of places, adding unwelcome sights or views, smells and sounds. This is particularly relevant to controversial energy technologies, as competing claims about the visual impacts of development are a common characteristic of protests (Devine-Wright, 2005). Energy projects may threaten place-related *self-efficacy* if processes of decision-making, including public consultations, are believed to be exclusive, secretive or inequitable. Such threats may be especially prevalent when a place is symbolic of 'home', and when energy technologies are believed to be 'imposed' upon places by companies or state organizations without genuine public engagement (Gross, 2007), as a sense of territorial control is consistently emphasized in the literature on home (Easthorpe, 2004). Threats to place-related distinctiveness, continuity and self-efficacy may, in turn, lead to reduced levels of place-related self-esteem, and such reductions can trigger a number of different forms of coping response.

Coping responses involve different levels of analysis, from intra-psychic to collective (Breakwell, 1986). At the intrapersonal level, individuals may deny that change is occurring (Bonaiuto, Breakwell, & Cano, 1996) or deny the possibility of negative impacts, as a form of protection against negative consequences. Alternatively, they may engage in anticipatory detachment (Brown & Perkins, 1992; Possick, 2005), imagining themselves to be living elsewhere in the future. At the interpersonal level, individuals may communicate their concerns to trusted others via social networks, sharing emotions and attempting to make sense of change. Coping responses may involve re-interpreting place change as individuals and groups strive to maintain positive place identities, thus blurring the boundaries between the 'interpreting' and 'coping' stages of the framework. This is supported by literature on social representation, which has identified how representations of new technologies in the media manifest 'collective symbolic coping' (Wagner, Kronberger, & Siefert, 2002) reducing the sense of threat that they may pose to society.

In relation to behavioural responses, individuals may cope with place change by literally detaching themselves from the place, departing if they feel that planned place changes are anathema to the emotions, meanings and sensory experiences hitherto associated with a cherished place. Such responses implicate levels of place-related self or collective efficacy (Twigger-Ross & Uzzell, 1996), which can trigger forms of 'place protection', the form of action closely associated with the NIMBY concept (Dear, 1992). As individuals, such actions include signing petitions, writing letters to political representatives or newspapers and engaging in collective protest, similar to the citizenship forms of environmentally significant behaviour described by Stern (2000). At the collective level, this explanation is consistent with Manzo and Perkins' (2006) analysis of the role of place attachment in promoting community participation, as the authors asserted that voluntary activities on behalf of a place or community should be more commonly understood as arising from the emotional bonds between people and places. It is also consistent with literature on the politics of place, which has emphasized how constructions of threat arising from 'development' can be used to mobilize and sustain a common sense of community identity (Dalby & Mackenzie, 1997).

Whether disruption actually leads to place-protective behaviour is likely to be shaped by a variety of psychological and contextual factors – place-protective action is certainly not inevitable. Beliefs about the degree of influence individuals or groups have over place change, described by Wolsink as political efficacy (Wolsink, 2000) in the context of opposition to wind farms, are likely to be an important factor. When levels of self or collective efficacy are weak, behavioural resistance will be less likely. Individuals may feel powerless to influence decision-making, having no alternative but to accept change or detach themselves from the place. Efficacy beliefs are likely to correlate with aspects of the local social, political and economic context. Loring (2007) emphasized how the presence of stable, cohesive social networks correlated with wind energy projects in the UK, Germany and Denmark that were strongly contested by local people. This is relevant to place attachment as research has suggested that attachment is stronger in places with stable social networks and higher levels of affluence (Livingstone, Bailey, & Kearns, 2008), intuitively chiming with presumptions of 'NIMBY' type opposition in relatively affluent communities. Future research needs to carefully unpick how factors such as disruption to place attachment, efficacy, social networks and economic deprivation interact, underlining the multi-disciplinary analysis that is required to fully understand the causes of place-protective behaviour.

Table 1. Stages of response to place change at different levels of analysis

| | Knowing | Interpreting | Evaluating | Coping | Acting |
|---------------------|--|---|---|---|--|
| Socio-cultural | Reading, watching or listening to media reports Hearing from a group source | Reading, watching or listening to media reports Attending public meetings or exhibitions | Learning about previous cases of place change Learning about instigators' or group leaders' views | Reading, watching or listening to media reports Joining or forming a protest group | Adopting culturally normative forms of action Engaging in collective actions |
| Collective or group | | | | | |
| Inter-personal | Hearing from a friend or neighbour Direct (sensory) experience | Discussing with a friend or neighbour Imagining, anticipating, day-dreaming | Learning of trusted other's views Feeling negative or positive affect; evaluative judgements of change | Talking to trusted friends Anticipation, fantasy or denial | Lobbying key actors Writing letters, signing petitions, detachment from place |
| Intra-personal | | | | | |

Methodological aspects

Trajectories of response over time are likely to differ across individuals, for example depending upon positioning in the social context and the nature of that context. The multi-level nature of response trajectories is summarized in Table 1, illustrating the variety of ways that individuals may respond to place change.

Researching these trajectories requires methods sensitive to the different levels and stages. Single-time surveying of particular energy projects, the most popular research approach to date, is best suited to reveal the adoption of specific cognitions arising from interpretation of change, and the holding of specific emotional responses and attitudes. Qualitative methods are suited to reveal the inter-subjective nature of processes of interpretation and coping, including in-depth interviews, group discussions, free association tasks, analysis of secondary data such as media articles and the use of the *q* method (Ellis et al., 2007). The use of a multi-method approach has been advocated for the energy research literature (Devine-Wright, 2005; Toke & Haggett, 2006) as well as being a longstanding attribute of social representations research (De Rosa, 1993). However, to fully reveal trajectories of response over time, longitudinal designs are required, involving methods such as diaries or repeat focus groups (Breakwell, Hammond, & Fife-Schaw, 2000).

CONCLUSION

Change or disruption to place has been a consistent interest of researchers, yet accounts of change have not sufficiently encompassed the affective and symbolic dimensions of change, requiring a more socially embedded perspective capturing the variety of coping responses that aspects of place change may prompt. This paper proposes a novel framework for understanding psychological aspects of place change, connecting literatures on place attachment with the social psychology of social representations and identity processes. Together, these offer a means of accounting for place-protective action that addresses Stedman's (2002) plea for an approach that encompasses the creating and sustaining of symbolic meanings about a place. The framework provides a guide for future research, notably how different protagonists seek to anchor and objectify change, for example when projects are framed by opponents as 'industrializing' hitherto 'natural' places, and how such interpretations are adopted by local residents, interacting with place attachment to produce emotional, evaluative and behavioural responses.

The framework also has applied implications, for example suggesting a less pejorative means of engaging with public opposition that goes beyond the labelling of opponents as irrational or ignorant, and a need to expect, rather than decry, emotional responses from local residents. Policy makers and industrialists face the challenge of devising energy projects and procedures that are interpreted to enhance rather than disrupt places, promoting support rather than opposition, and managing conflicts when they arise, mindful of the symbolic, emotional and evaluative aspects of place attachments and place identities. To that end, the framework suggests psychological principles that can be used to inform practices of public engagement, whereby project instigators can seek to anchor and objectify change in such a way as to enhance rather than threaten place-related continuity, distinctiveness, self-efficacy and self-esteem.

Despite its potential academic and practical implications, the framework is nonetheless constrained by a predominant interest in accounting for psychological responses to energy technology projects. Future research is required to examine its value in accounting for responses to other forms of development (e.g. industry, retail or housing projects), changes to places that are less gradual and planned, and changes that are actively supported or ignored rather than actively opposed. Finally, the framework provides a psychological account of public responses that should be seen within a larger multi-disciplinary context of economic, political and sociological factors that shape the histories of places, the policies and procedures shaping development and the abilities of individuals and groups to actively support or oppose change.

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