Research article

Storying energy consumption: Collective video storytelling in energy efficiency social marketing

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ABSTRACT

Despite calls for more socio-technical research on energy, there is little practical advice to how narratives collected through qualitative research may be melded with technical knowledge from the physical sciences such as engineering and then applied in energy efficiency social action strategies. This is despite established knowledge in the environmental management literature about domestic energy use regarding the utility of social practice theory and narrative framings that socialise everyday consumption. Storytelling is positioned in this paper both as a focus for socio-technical energy research, and as one potential practical tool that can arguably enhance energy efficiency interventions. We draw upon the literature on everyday social practices, and storytelling, to present our framework called 'collective video storytelling' that combines scientific and lay knowledge about domestic energy use to offer a practical tool for energy efficiency management. Collective video storytelling is discussed in the context of Energy+Illawarra, a 3-year cross-disciplinary collaboration between social marketers, human geographers, and engineers to target energy behavioural change within older low-income households in regional NSW, Australia.

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1. Introduction

Household energy efficiency is a key environmental management focus in a context of climate change, energy security, rising energy prices, and energy poverty (Yergin, 2006; Simshauser et al., 2011; Council of Australian Governments, 2015). Domestic energy consumption is associated with various climate change effects including changing atmospheric conditions, topography, and damage to water systems and wildlife (Akhmat et al., 2014). Energy efficiency is also at the fore of the United Nations' Environment Programme. It is estimated that household energy efficiency could contribute up to one-fifth of carbon emissions reductions that are stated as being necessary by the Intergovernmental Panel on Climate Change (United Nations Environment Programme, 2014). The problem is how to reduce the amount of energy required to provide and perform everyday functions to maintain household health and wellbeing within bio-physical and social preconditions.

It is well established in the energy literature that making energy policy and delivering energy efficiency programmes requires an understanding of bio-physical and social preconditions (Guy and Shove, 2000; Shove, 2010). Energy researchers who have embraced ideas from social practice theory have identified that domestic energy use is always a reciprocal relationship between the material fabric of the house, technologies, social norms, routines, bodily skills and habits (Strengers, 2013; Mackley and Pink, 2013; Shove and Walker, 2014; Judson and Maller, 2014; Strengers and Maller, 2015). This literature suggests that domestic energy consumption is integral to making and maintaining the house-as-home. On top of this, the work of scholars deploying narratives frameworks are pivotal to critical enquiry of environmental management, including energy consumption (Hitchings and Day, 2011; Day and Hitchings, 2011). Narrative analysis can provide scholars and practitioners with a means to attend to how energy stories help to constitute social-political-material life including the everyday practices of households (Waitt et al., 2016), the decisions of corporations (Ngoasong, 2014), and policy rhetoric (Trutnevyte et al., 2015). Narrative frameworks offer crucial insights as to how particular domestic energy knowledge is produced, circulated, and understood to help sustain specific practices,

subjectivities, and living spaces in a home (Moezzi et al., 2017).

In this paper, we introduce collective video storytelling as an approach used as part of Energy+Illawarra, a community energy efficiency social marketing programme in regional New South Wales, Australia involving interdisciplinary collaboration between social marketers, engineers, and human geographers. Environmental management has been invigorated by the possibilities offered by social marketing approaches to address several pressing challenges including water usage, recycling, and energy efficiency (Andreasen, 2006; Department of the Environment, Food and Rural Affairs, 2008; McKenzie-Mohr, 2011; Haq et al., 2013; Sheau-Ting et al., 2013; Jensen and Chappin, 2017). However, building on more recent socio-cultural and critical work in social marketing (see Stead et al., 2013; Lafreniere et al., 2013; French and Gordon, 2015; Waitt et al., 2016; Spotswood et al., 2017) our core concern is the use of narratives to influence energy efficiency social marketing behaviour change, and the ways that the scientific and technical knowledge about energy efficiency are framed within the lay domestic energy knowledges.

We offer an environmental management approach that responds to the call for a new *modus operandi* that brings together divergent epistemic foundations of energy knowledge from the social and physical sciences to create new energy realities formed from dialogue, reflexivity, and learning from clashes in ontology (Castree and Waitt, 2017; Gordon et al., 2017). Considering this, we offer a practical social marketing strategy we name 'collective video storytelling' that brings together engineering science with the 'critical' thinking of narrative approaches. Collective video storytelling involves melding together building physics, and thermodynamics with cognitive concerns (evidence, reason, practical efficacy) and the embodied, aesthetic, moral, economic, political, and personal concerns of older low income residents.

Our argument is structured as follows. First, we present our theoretical framework, by aligning a narrative framework (Green and Brock, 2002; van Laer et al., 2014) within a social practice theory paradigm. The subsequent sections present our method for designing what we term 'collective video storytelling', discussing how we melded lay narratives from qualitative social science research with technical narratives from engineers as part of an energy efficiency social marketing programme. We then illustrate our application of 'collective video storytelling' with older low income people in the regional New South Wales, Australia. Collective video storytelling is one example of active engagement across disciplinary lines so that engineering science is socialised for behaviour change. In the context of collective video storytelling the scientific knowledge to help reduce energy bills makes social sense. Engineers and scientists can thereby play a central role in 'opening up', rather than 'closing down' discussion with households about what is feasible and socially desirable by bringing together lay narratives and scientific knowledge.

2. Literature review and theoretical framework

2.1. Broadening perspectives in environmental management

In environmental management circles academics and practitioners are discussing how the humanities and social sciences need to work alongside the natural sciences to tackle issues such as climate change, and energy efficiency (see Castree, 2016; Cooper, 2017). In the context of domestic energy, scientific and technical knowledge is important because it can help answer questions that householders may have about where does energy go and how much energy is used by different appliances (Dieu-Hang et al., 2017).

However, environmental management needs to incorporate and

socialise the knowledge of engineers, scientists, and social scientists to provide greater context and understanding about the how, what and why of energy use, climate change, etc. and to demonstrate how these issues intersect with the social world. Therefore, humanity and social science scholars have opened-up new perspectives in environmental management by drawing attention to diverse social norms, aspirations, embodied competencies, technologies, and desires (see Shove, 2003; Gibson et al., 2013; Head et al., 2013; Strengers and Maller, 2015). The starting point of a more 'interdisciplinary' enquiry towards environmental management insists on thinking about how science may speak to the different material, technical, social, and embodied relationships that constitute the problem of energy efficiency and how they may be rearranged (Schmidt and Weigt, 2015). Hence, here, we examine how social practice theory aligned with a narrative framework offers a useful lens to help recruit and activate engineering science in a practical way that is alive to both the social and material elements that comprise energy use.

2.2. Social practice theory and energy research

To think about the social and material arrangements that underpin energy use we take our lead from Schatzki (2002) and Reckwitz (2002). For these scholars, practices refer to everyday embodied habits that simultaneously constitutes, and is constituted by the social and physical milieu. The primary focus in social practice theory in energy research is therefore on the arrangement of the material and social elements that constitute practices themselves and not the performers. Social practice theory has gained currency in domestic energy efficiency research because it takes seriously materiality (such as refrigerators or building form), alongside social norms, and bodily competencies (see Chappells and Shove, 2005; Gram-Hanssen, 2010; Shove, 2010; Shove et al., 2012; Shove and Walker, 2014).

For example, the work of Strengers (2013) is pivotal to opening-up a different conversation with Australian consumer advocacy groups and decision makers on the possibilities of smart energy technologies to reduce or shift energy demand for low income households. Social practice theory points to the importance of narratives in establishing, fixing and challenging shared social norms about specific technologies, policies and behaviours within a particular milieu (see Cupples et al., 2003; Kjerulf Petersen, 2008; Hitchings and Day, 2011; Hitchings et al., 2015). For our purposes, it is how social practice theory can help understand how fixity, and change, in patterns of energy consumption occurs within social groups that may help socialise engineering science.

2.3. Narrative as an element of social practice

Alive to the importance of far reaching implications of narratives in fixing and challenging domestic energy arrangements we turned to literature that offered insights to how stories transmit and challenge socio-cultural ideas, norms, and structures (Visconti et al., 2010; Moore, 2012). Narrative scholars argue that shared stories are integral to the process of differentiation between and legitimation of social groups (Barthes, 1975; Rohse et al., 2013). Barthes (1975) proposed that shared stories have a common structure of functions, actions, and discourses that facilitate the processes of story-telling, listening and interpretation, and help making the story possible, believable, and pleasurable (van Laer et al., 2014).

Shared narratives operate to produce particular knowledge of the world, that help shape and reshape our experience of what are 'acceptable' and 'unacceptable' ways to behave. After Foucault (1972), these may be understood as 'regimes of truth'. For