

The Complexity and Dynamics of Household Energy Practices'

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A growing proportion of research into energy consumption is being conducted from a social practice perspective, focusing on patterns of consumption and mundane aspects of everyday life. In particular, the work of Elizabeth Shove has been fundamental in driving this body of work forward, encouraging both scholars and policy makers to question dominant rational choice paradigms traditionally favoured by behavioural psychologists and economists. However, as Shove herself concedes, little of this research has found its way into climate change policy (Shove, 2012). Consequently a key question for scholars of practice theory is, why? One possible explanation is that the complex and nonlinear picture of domestic energy consumption presented by practice theorists doesn't fit with policy makers desire to highlight straight forward problems with simple solutions. Furthermore, to date the majority of research in to domestic energy demand from a practice theory perspective has focused on explaining, in detail, individual practices such as showering (Hand et al., 2005), heating (Gram-Hanssen, 2010; Day and Hitchings, 2011; Kuijer and Jong, 2012), freezing food (Hand and Shove, 2007), and lighting (Crosbie and Guy, 2008). While these studies provide a useful insight into the way in which practices emerge in societies, how they change and why they eventually die out, they do not provide a holistic picture of the environmental impact of everyday practices and are therefore of limited use to policy makers.

A principal aim of the Surrey University teams' contribution to the WholeSEM project is to extend the use of practice theory from exploring individual and bundles of practices to understanding domestic energy demand holistically. We hope to achieve this by using multiple methods (walking tours of people's homes, large scale on-line survey, energy monitoring and thermal imagining). This will allow us to develop a much fuller picture of the dynamics of domestic energy use. Central to the project is the development of an agent-based model (ABM) to enable a deeper analytical understanding of the mechanisms underlying the habitual performance of social practices in households. The ABM will allow us to understand the co-evolution and co-existence of energy consuming practices.

The findings from studies based on social practice theory into energy demand can be quite dense and difficult for policy makers to interpret and implement. The ABM will allow them to unpack details regarding any one factor that they would like to investigate further and assess its unique role in influencing the overall dynamics of domestic energy consumption.

In this presentation we will present some initial findings from our data collection and demonstrate the potential of an ABM to unpack the complex and often abstract dynamics of energy intensive social practices.