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Original research article

Steering demand? Exploring the intersection of policy, practice and lives in energy systems change in Ireland

Mary Greene[a],*, Frances Fahy[b]

[a] *Environmental Policy Group, Wageningen University, the Netherlands*
[b] *Discipline of Geography, School of Geography and Archaeology, NUI Galway, Ireland*

ABSTRACT

Recent advances in sociological investigations of energy-systems-change highlight the influence of a wide range of policies, beyond those typically considered relevant to energy, on energy demand. To this, a new field of ('non-) energy policy' scholarship is exploring the ways in which policies across multiple societal sectors 'steer' demand. However, much of this work has been conducted at the scale of institutions and systems, with comparatively little work exploring the intersection of policy and everyday life. As a result, little is known about the ways in which (non-)energy policies shape demand in the context of situated, domestic energy practices. This paper seeks to advance (non-)energy policy scholarship by connecting recent developments in systems-based perspectives with situated practice-theoretical investigations of everyday practices. Drawing on biographic-narrative analysis of Irish individuals' energy practices and their evolution over time, it highlights the potential of experience-centred inquiry for generating novel empirical insights regarding the contexts and processes by which policies and practice intersect. An illustrative discussion of 'traces of policy' and their influence on individuals' conduct reveal insights into the everyday contexts and socially differentiated ways in which policy 'steers' action. Analysis reveals that (non-)energy policies of various kinds have worked to steer action by setting agendas, shaping public discourse and delimiting action. Individuals are posited as active agents mediating the intersection of policy and practice in everyday life. The paper concludes by outlining the parameters of a new research agenda for experience-centred explorations of the intersections of policy, practice and lives in energy-systems-change.

1. Introduction

The theme of achieving significant demand reduction is of central relevance to questions of sustainable development, to which different disciplinary perspectives have offered divergent insights into the nature of human action and how it changes over time. Despite variations across governments in terms of energy governance structures, arrangements and influences (cf. [1]), traditional 'problem framings' [2] of demand reduction have been dominated by two key approaches focused on advancing technological efficiency gains on the one hand and changing individuals' behaviours/nudging informed consumer choice on the other [2,3]. Technological efficiency perspectives have primarily emanated from engineering and natural scientific disciplines. Here, the focus has been on developing more efficient technological responses to energy production, generation, distribution, supply and consumption challenges [4,5]. However, there is now an emerging consensus that attention should not only be on the development of low carbon forms of

energy production, but also on advancing innovative methods of reducing demand for energy [6]. Building on insights from cognitive science and economics, perspectives focused on 'nudging' consumer choice have had a significant influence on policy measures in Ireland and abroad. These have been concerned with understanding how and why behaviour can be transformed while upholding the ability of individuals to enact freedom of choice [7]. Here, the predominant 'going green' discourse [8] continues to remain inherently actor-centric, focusing on the individual and the market as sites where change plays out, and cognitive factors, such as attitudes and values, as central determinants of behavioural outcomes.

However, the limitations of these dominant demand side approaches for achieving demand reduction have been well documented [8–10]. Both efficiency and actor-centric approaches have been critiqued for failing to adequately consider dynamic social contexts that frame, shape and delimit action as it evolves over time [11–13]. While recent advances towards capturing the influence of contextual factors,

as 'choice architectures' [7, 14–17], have been welcome, they remain at best incomplete. Conceptual and methodological tools characteristic of efficiency and choice perspectives fail to effectively represent complex social dynamics of energy-systems [3,18]. In conceptualising context as a set of external variables that influence individual consumer's decision making, dominant approaches have been ill equipped for understanding the social constitution of demand, including how energy needs and expectations are socially constructed and dynamically constituted, varying across space and time change [9,19,20]. Hence, understanding broader political economy dimensions, including the role of policy, in the constitution of demand, continues to remain limited [3]. In sum, little is known about the ways in which priorities and objectives across diverse policy arenas are embroiled in creating and sustaining demand, as well as the role they may conceivably play in facilitating a broader project of demand reduction [3,19,21].

In response, there has been considerable debate about the value of alternative social science paradigms for informing energy-systems-change. Reflecting this is a growing body of critical social science disciplines, as mirrored in the burgeoning body of work published in *Energy Research and Social Science*, which has begun to engage with energy demand. These perspectives offer contextualised conceptual and methodological approaches that reframe demand as a profoundly social issue, reflecting and shaping the socio-economic, cultural and political-economic structures of societies [1,12]. Within this scholarship, social practice theory (SPT) has emerged as a cross cutting body of work that has sensitised research to explorations of the social dynamics of energy-systems-change. Directing attention away from efficiency and choice, SPT approaches reconceptualise energy demand as an outcome of people's participation in historically contingent and socially recognisable practices that comprise part of daily living and have significant energy-demanding consequences [11,22]. Examples include feeding ourselves, moving around and fulfilling evolving social roles throughout the lifecourse. Practice-centred approaches have been pivotal in highlighting the ways in which energy needs, expectations and modes of conduct evolve in tandem with broader dynamics in socio-technical systems and governance contexts [12]. However, while practice theorists have had much to say about the limitations of behaviourist and techno-centric approaches, much less attention has focused on the implications of shift towards theories of practice for understanding and approaching the governance of social life [3,21,23]. As a result, little SPT scholarship has systematically explored the ways in which policy is already embroiled, in explicit and implicit ways, in the constitution of demand.

That said, a very nascent body of practice-centred work has emerged to explicitly explore the consequences of 'non-energy policies' for energy-systems-change. 'Non-energy policies' are defined within this research as policies that are not explicitly formulated with energy system consequences in mind, while 'energy policies' refer to policies that are directly focused on reducing demand or encouraging pro-environmental conduct [3,19]. Departing from dominant approaches, this embryonic field on '(non-)energy policies' [3] is advancing dynamic and contextual tools to shed light on a complex range of intersecting policies operating across multiple sites, scales and sectors – in domains such as economics and labour [24], welfare [25,26], health [27,28] and gender policies [29] – in the constitution of demand. These accounts, and those by others [21,30], direct attention to the often invisible, unpredictable, non-linear and uncontrollable impacts of a wide range of non-energy policies on daily conduct, suggesting that efforts to direct demand are inevitably constrained by multiple processes beyond those generally related to energy and consumption policies.

Despite these recent advances, key gaps in understanding remain, specifically regarding the contexts and processes by which more and less visible energy policies intersect with practice in the context of situated performances and domestic energy practices. Tentative work highlights that (non-)energy policies generally have insufficient or unacknowledged impacts on demand, leading to them having an 'invisible' effect [3], with calls for a systematic research agenda to explore and make visible their influences. A review of the extant literature reveals that much emerging work has been conducted at a systems or institutional scale of analysis [cf. 3, 18], with comparatively little work exploring (non-)energy policy dynamics as they play out in the context of lived lives. Directing attention to the complex ways in which energy-demanding practices intersect with policy and governance arrangements, a systems-perspective has been pivotal in identifying and connecting policies across multiple sectors with energy-systems-dynamics. While this work provides a crucial step in producing an aggregate picture of sector influences and directions for future inquiry, it has been less suitable for exploring situated processes and contexts of change at the scale of everyday life practices. Insight into the intersection of policy and practice through a lived experience perspective has the potential to generate new policy-relevant insights that have been obscured in systems-scale or sector-specific accounts.

In response to these gaps, this paper aims to explore the potential of an experience-centred perspective for advancing understanding of the influences of more and less visible energy policies on demand. Focusing on domestic energy practices, the paper advances (non-)energy policy scholarship by connecting recent developments in systems-based perspectives with situated practice-theoretical investigations of everyday practices. Within this paper, contexts under investigation include both everyday contexts and the broader socio-technical and socio-political contexts which frame these. The emphasis on processes is concerned with uncovering the social dynamics by which these contexts interact in studying how policy intersects with domestic action. To this, we argue that a combined systems and everyday practice lens holds much potential for revealing inductively generated insights that have been overlooked in systems-scale accounts. In seeking to provide an empirically driven account, this aim is explored in the context of a recent biographic, qualitative investigation of energy demand conducted in Ireland. Conceptualising energy demand through a situated, practice-centred lens, this study focused on understanding contexts and processes shaping individuals' biographic dynamics in key household practices implicated in demand, namely food, mobility, water and laundry practices (cf. removed for anonymous review). The term demand is used herein to denote consumption of energy as it is embedded in the performance of these socially recognisable and environmentally significant practices.

This paper is structured as follows. The introduction has situated the paper in recent advances in (non-)energy policy scholarship. Section 2 builds on this to explicitly consider the implications of a practice-theoretical conception of social change for conceptualising the intersection of practice and policy, reviewing recent developments in the field and identifying gaps in experience-centred approaches to which this paper seeks to address. Section 3 considers the potential of a narrative-biographic frame for operationalising practice-centred explorations of the intersections of policy, practice and lives in energy-systems-change. It further outlines the research context and provides an overview of the multi-methodological dynamic, qualitative approach designed and implemented in this study. Section 4 presents and discusses empirical findings that demonstrate a range of contexts and processes by which more and less visible (non-)energy policies shape action. Finally, Section 5 offers a concluding discussion which situates the contribution of the paper in the broader research and policy contexts.

2. Policy and practice

In response to the limitations of dominant demand side approaches, in recent years there has been a paradigmatic shift towards theories of practice as a means through which to conceptualise dynamics of consumption and demand [cf. 13,22,31,32]. Social practice theories (SPT) offer a radical and distinctive approach to conceptualising social change that departs from dominant approaches. Although there is no single practice theory [33], they are united in stressing the contextual

and performative nature of social life, connecting dynamics in routinised conduct with the reproduction or transformation of institutions and social structures. SPT has been appropriated by researchers seeking to highlight the social dynamics of demand, situating the conduct of individuals within the context of the broader socio-technical settings in which it develops and is performed [11,12]. However, to date, little work has considered the implications of SPT for conceptualising the intersections of policy and practice in energy-systems-change [3]. In this section, we consider the consequences of a practice theory frame for understanding the influence of policy on demand through the lens of individual practice trajectories and the broader systems-of-practice in which these trajectories evolve. Throughout, we discuss the significance of these two scalar perspectives for considering how the governing of everyday life can be understood and approached.

2.1. Analysing careers and systems-of-practice

SPT approaches depart from technologised and individualised perspectives to focus on understanding how social practices, understood as socially recognisable and widely performed ways of doing, emerge, persist and disappear [13, 22]. A key means by which change has been explored has been through an analysis of the trajectories or 'careers' of specific practices. Here Shove et al.'s [13] dynamic elemental model of practice has been most influential, following which the predominant approach to exploring change in practices over longer time scales has been to analyse changes in the configuration of elements (meanings, materials, knowhow) that comprise them (See Fig. 1).

From this elemental perspective, new habits and routines evolve as specific elements of practice emerge and change. For example, Cairns et al. [34] analyse the trajectory of car driving by exploring how its key elements – cars, infrastructure, skills required to drive, as well as rules and norms about driving in society – have continuously evolved in different ways around the world over the past two centuries. In this way, practices develop specific 'careers' or biographies of their own [11], with their lives often predating those of individuals. Individuals, conceptualised as 'practitioners' or 'carriers' of practices are recruited to practices through processes of socialisation, with understanding of what constitutes appropriate conduct shaped by socially constructed understandings of what it means to perform a practice well [35,36]. As individuals become 'enrolled' in a practice, they become 'carriers' not only of skilled bodily behaviour, but also of particular routinised forms of tacit understandings and forms of competence [22,37]. Individuals

draw on and integrate the requisite elements of practice in situated performances of practice. In embodying and performing a multitude of social practices during their lives, the individual represents a 'unique crossing point of practices, of bodily-mental routines' [37: 256].

Building on this is an intervention framing that directs attention away from targeting individuals' attitudes, values or behaviours to how policy can disrupt and shape practices by intervening, targeting and circulating new practice elements [38–40]. However, a focus on the careers of individual practices has obscured a deeper analysis of the broader socio-technical and political-economic contexts in which specific practice careers are situated and evolve [33,41]. Recognising practices as existing within a wider 'plenum' [33] or 'system' of practices (SoP) offers a fruitful means of expanding the frame of analysis to consider broader contexts of change. Scaling analysis up from an analysis of individual practice careers to a SoP approach shifts attention away from analysing the internal differentiation of practices to a focus on how practices interlink, intersect and interconnect as they shift and evolve over time. Just as the elements constituting a practice link together to form socially recognisable practices, practices themselves form links to one another to create bundles, complexes and constellations of practices [13]. Following this, a SoP has been advocated as a frame through which to analyse and better understand overlaps and interconnections between practices, including practices of governance and everyday life [41,42].

In recent years, a small but growing body of research is emerging to explore influences of policy on energy-systems-change through a SoP lens. Two recent review papers provide a systematic view to guide future research in the field [3,18]. This analysis suggests that a wide set of policies, across multiple domains spanning health, education, welfare and ICT, among others, are implicated in often invisible ways in the constitution of demand. In a neoliberal governance context, multiple institutions and governance actors, across governmental and non-governmental sectors, and national, international, regional and local scales are involved in the formulation and implementation of policy objectives and procedures. These actors include national government departments, non-governmental and international organisations, multinational corporations, local and regional authorities and societal institutions such as schools, hospitals, prisons and universities, all of which are involvedin setting objectives and guidelines around appropriate conduct. Meta-policy objectives associated with neoliberal governance – such as those relating to marketisation, the valorisation of growth and privatisation – cut across many sectors to influence how policy objectives are set [3]. Recent work highlights that neoliberal meta-policy objectives have had huge implications for rising energy demand, often to a greater and more far reaching degree than sector-specific policy objectives [43].

Despite these tentative insights, to date, there has been a paucity of empirically informed research exploring the effects of (non-)energy policies on demand. The small body of work that exists has largely been conducted at an institutional scale of analysis to explore how practices of policy making, in various institutional settings, including health [44], higher education [45], and energy policy sectors [23] are implicated in the formulation of objectives and procedures which shape resource use. For example, both Royston et al. [45] and Gormally et al. [43] outline how neoliberal policy objectives have worked in higher education institutions to indirectly drive up energy demand. Royston et al., drawing on interviews with managers in higher education institutions, reveal how neoliberal meta-policy objectives associated with marketisation, profit generation and tuition fees have shaped the emergence of new policies focused on enhancing 'student experience'. New buildings, longer opening hours and larger, more resource-intensive student accommodation, have resulted in increasingly demanding energy expectations. Similarly, Gormally et al. find that neoliberal meta-policy objectives surrounding good science and competitive employment have shaped increasingly resource-intensive research practices in a university lab setting.

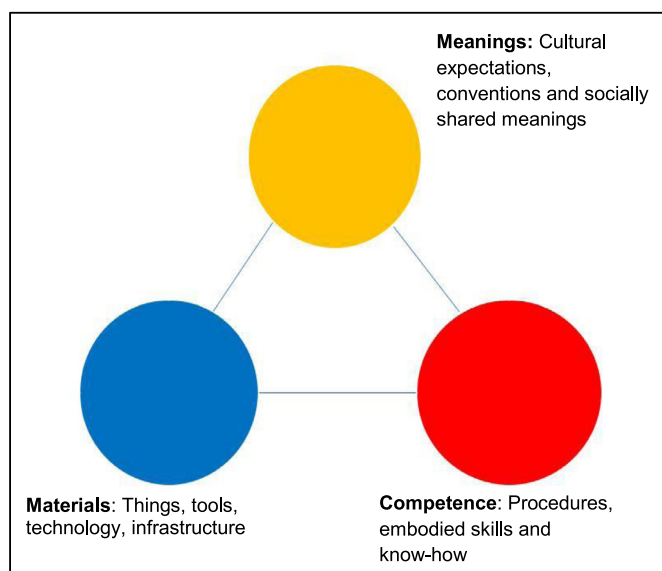**Fig. 1.** Dynamic elements of social practice [13].

Inside figure:
Meanings: Cultural expectations, conventions and socially shared meanings

Materials: Things, tools, technology, infrastructure

Competence: Procedures, embodied skills and know-how

This, and related work [25,26], are making more visible the ways in which (non-)energy policies are implicated in demand at various institutional and governance scales. However, there remains a paucity of systematic empirical investigation [18]. One reason for this relates to the methodological and conceptual difficulty of capturing and representing the influence of (non-)energy policies on demand. Research tools must be capable of addressing challenges in representation associated with measuring and understanding the often indirect, invisible and temporally protracted fashion in which policies shape demand at different scales of influence [3]. Discerning causal relations and the processes by which policy 'steers' action throw up additional challenges. Practice theoretical conceptions of agency as distributed across meanings, materials, resources and arrangements complicate analysis which seeks to understand 'steering' effects. While the emphasis on distributed agency within SPT has been critiqued as resulting in 'central conflation', where nothing of substance can be said about causal relations [46–48], emerging work nevertheless holds assumptions about causality, whether these are made explicit or remain implied. For example, Cox et al. [18] delineate relations of causality in their working conceptualising of 'energy system'. In their frame, non-energy policies are explored as explanatory or causal variables and energy-demanding practices as dependent variables.

Notwithstanding these advances, little work has focused explicitly on exploring the contexts and processes by which policy 'steers' action. Tentative insights in the field suggest policy can 'steer' action by influencing public discourse and normative prescriptions as well as shaping infrastructural and material developments [3,25,26]. Butler et al. [25: 4] in their investigation of the influence of welfare policies on demand, suggest that the process by which policy steers action is primarily one of generating social rules and cues that 'create or negate possibilities for people to take up and reproduce or reinvent practices'. Recent work indicates that policy steers demand by shaping normative understandings of how a practice should ideally be performed. For example, Hand et al. [27] show how government-led health campaigns have shaped public perceptions of cleanliness, leading to widespread practices of daily showering, while Nicholls and Strengers [28] reveal that official infant health advice in Australia has shaped increasing demand for air conditioning. Other work suggests that economic and planning policies, in driving increasing resource-intensive developmental pathways, have shaped the evolution of more demanding energy expectations and practices [11,12].

2.2. Policy, practice and lives

Despite these tentative developments, little is known about the processes by which policy shapes action, especially in the context of domestic energy practices. Rather, most existing work has focused on institutional or macro scale analysis and practices of policy making with comparatively less work connecting (non-)energy-systems governance to everyday life practices. A key issue here has been the conceptualisation of the individual within explorations of policy-practice dynamics. Reflecting broader critiques of the limited perception of the individual within recent practice approaches to energy research [cf. 11, 49] there has been little attention to the specific role and everyday experiences of individuals in the field.

That said, in recent years a small body of situated, qualitative research has begun to explore the intersection of policy and practice through individuals' lives. A key focus here has been on exploring policy influences through the lens of prescriptions. While policy refers to broader scale objectives and procedures [3], prescriptions can be conceived of as expert and institutionally informed guidelines that exist in public and private spheres around how a practice ought to be performed [49, 50]. The notion of prescriptions thus direct attention to the norm-influencing effect of policy in shaping practice meanings and has been advocated as a means for connecting situated conduct to analysis of the policy-practice nexus. Plessz et al. [49], for example, show how

individuals draw on and negotiate expert prescriptions relating to health and environmentalism in reconsidering their food practice during significant life transitions. They suggest that individuals negotiate multiple conflicting prescriptions in considering their practice, with environmental prescriptions often deprioritised in relation to those focused on health, wellbeing and value for money. This and other work [50] suggest that individuals play an active role in linking prescriptions to practices, but that this process plays out in socially patterned ways, mediated by factors such as socio-economic status and social capital. To this, Plessz et al.'s [49] analysis reveals that middle- and upper-class individuals are more likely to draw on expert and policy prescriptions in reconsidering their food practices, in contrast to individuals of lower socio-economic status, who draw on the practice norms of their social networks.

In summary, recent advances in (non-)energy policy work has directed attention to the influence of a wide range of policies in shaping demand. This work suggests that SPT offers much potential for advancing holistic, contextual and dynamically situated approaches to understanding the intersection of policy and practice. Yet, little work has explored how (non-)energy policies shape practice through the perspective of individuals' lives, especially over longer timescales. Recent advances in experience-centred approaches are directing attention to the processes by which individuals connect policy and practice. However, to date, analysis have been dynamically limited and sector specific. We argue that recent developments in SoP approaches to non-energy policies can be usefully advanced through more situated, ethnographic approaches to studying the intersections of policy and practice. The remainder of this paper discusses the methodological approach and empirical findings generated through a narrative, practice-centred exploration of individuals' energy practice biographies.

3. Methodology

3.1. A biographic-narrative, practice-centred approach

Empirical analysis of the intersections of policy, practice and lives offer exciting opportunities for experience-centred, practice-centred inquiry. However, they also present considerable methodological challenges, many of which relate to operationalising a practice-theoretical frame [51–53]. Research methods must be capable of representing elements and links between practices as well as capturing the often-invisible processes by which contextual forces shape action over time. These challenges are compounded by the taken-for-granted and routine nature of the energy practices under investigation. Innovative, dynamic and context-centred methods are needed to capture the intersection of everyday practice, individuals' lives and wider institutional and structural change.

Biographic-narrative inquiry is particularly suitable for attending to the subjective and experiential ways in which human beings, as active, performative agents, interact with structural, social and historical forces in the making of their lives [24,54]. Receiving increasing attention in social science energy research [55], biographic-narrative analysts conceptualise personal stories as a window to wider social narratives, revealing as much about socio-cultural and contextual processes as they do about the experiential and performative [58]. In offering an experience-centred, contextual and dynamic form of social analysis, emerging work is demonstrating the potential of biographic-narrative methods for revealing new insights into the dynamics of consumption as they intersect with governing practices [11,12,29,56,57]. Building on this research, this study developed a combined biographic-narrative and practice-centred methodology to explore the intersection of lives, practices and contexts in energy-systems (cf. removed for anonymous review).

The methodological design combined various biographical, practice-centred tools to collect and analyse data on individuals' energy practice biographies. The multi-modal methodology comprised three

interconnected stages, incorporating two biographic-narrative interviews, lifecourse and practice timelines, a two-week practice diary and walking video tours of participants' homes. The design of methods was theoretically informed by insights from biographic and social practice perspectives. Each method employed was designed to capture dynamics in individuals' engagement with elements of practice, as well as how continuity and change in practice careers are shaped by broader dynamics in biographic and social systems. The purpose of the multimodal approach was to ensure the methods combined to produce different narrative generating effects, enabling the researcher and participant to work together over a one-month time period to reconstruct individuals' everyday energy practices and their transformation over time. This paper primarily reports on data generated during the narrative interviews. However, the timelines, diary and walking tours, while providing specific data in their own right (cf. removed for anonymous review for insight into the specific role of additional methods in the data generation process), were crucial to the production of narrative talk on practice. The multimodal suite of verbal, visual and reflective methods worked in tandem as prompts for stimulating participants narrative reflection on taken-for-granted practices. The timescale considered in this study includes a retrospective analysis of change over the past 90–100 years, from the late 1920s to the present.

3.2. Research context and sample

When investigating the intersections of policy practices and daily conduct, Ireland emerges as an interesting research context. Following its independence from the United Kingdom in the 1920s, Ireland remained a demographic and social outlier, marked by mass emigration and poverty, well into the twentieth century. However, Ireland's entry to the European Economic Community in 1973 marked a decisive turning point for the trajectory of the nation, and, since then, the country has witnessed rapid and dramatic institutional, socio-cultural, economic and infrastructural change. This change has been associated with rising living standards and increasing demand, with this process intensifying during the period of economic expansion in the early twenty-first century known as the 'Celtic Tiger'[12]. Despite a brief reduction in overall energy use during the economic downturn (2008–2013), energy-related CO2 emissions have been growing again since 2014 [58]. Notwithstanding a plethora of primally neoliberal demand reduction policy measures in recent years, change is not occurring at the desired rate, suggesting current policy and practice are not making a significant impact in terms of meeting EU targets around energy [59]. Ireland's unique developmental trajectory provides an interesting lens through which to explore the intersections of lives, practices and policy contexts in energy-systems-change.

A total of 14 interviewees and five pilot interviewees (*n* = 19) participated in the study. Sampling criteria included age (50 +), gender, socio-economic status (low 19–38 k, medium 39–76 k, high 77–114 k), geographic location (urban and rural), reported levels of environmental concern (unconcerned to very concerned) and practice (degree of resource intensity of reported domestic energy practices primarily focusing on food and mobility). The rationale for this emphasis on diversity was guided by emphasis on exploring social differentiation in the processes by which policy, practices and lives intersect.

3.3. Data analysis

Data was analysed using an inductive grounded theory approach that combined vertical analysis of each case with horizontal analyses across cases. 'Traces of policy' [cf. 60] and their influence on individuals' conduct emerged inductively from analysis of biographic-narrative accounts. Importantly, this study did not explicitly seek to explore the role of policy in shaping action. Rather, the influences of policy emerged inductively through interpretive analysis of participants' narratives, highlighting the importance of exploratory

ethnographic investigations for revealing new insights into energy-systems dynamics [61,62]. The emergent narratives shed light on more and less visible and direct ways in which policies and institutions, as agenda setters, authority bodies and framers of key debates, have shaped lives and practices.

In the sections that follow, we consider the influence of non-energy and energy policies on everyday consumption practices. The findings centre on presenting illustrative examples to show how policies featured in individuals' accounts. Following this, the concluding discussion situates the empirical work in the broader research and policy context.

4. Findings

4.1. Non-energy policies

The biographic-narrative analysis revealed that a suite of intersecting non-energy policies, across a wide range of societal institutions in work, family and educational spheres, have shaped action and lives. These non-energy policies have been implicated in driving increasingly resource-intensive energy expectations and modes of practice. The role of non-energy policies in ratcheting up energy needs and expectations began to feature in participants' accounts primarily from the point of 1960s onward, following which a range of intersecting government agendas and priorities promoting growth, modernisation and neoliberal development began to feature as sources of influence. Ireland's entry to the EU surfaced in many narratives as a crucial turning point, directing the emergence of new meta-policy and development objectives. These objectives featured as sources of influence driving the introduction of policies that directly and indirectly shaped the evolution of more resource-intensive mobility and food practices. As outlined elsewhere, everyday practices, such as those relating to food consumption [63], waste [64], water use [65] and mobility practices [53] are intricately connected to energy demand as it is embedded in resource consumption. As key social practices implicated in the constitution of daily life, their analysis provides a lens through which to explore the energy-systems dynamics through a situated frame. In this section, the role of non-energy policies in shaping food and mobility conduct is discussed with illustrative reference to the role of work, education and health and safety policies.

4.1.1. Health and safety rules and regulations

Across narratives, a suite of health and safety rules and regulations emerging under the influence of a wealth of EU Directives featured as drivers of change in participants' accounts. Narratives provided interesting insights into how new policies surrounding health and safety regulations, such as 'sell by' and 'best before' labels, have inadvertently been involved in the evolution of increasingly resource-intensive food practices, shaping social prescriptions, standards and modes of conduct. For example, Tony, a 77-year-old grandfather, compares practices and norms surrounding food wastage between his and his children's generation. In doing so, he highlights the influence of 'best before' policy measures in the emergence of a throw-away disposition amongst younger generations:

> 'We don't dump fresh food or anything like that... Except if our son and our daughter in law come...and if a thing has an expiry date oh, they say, "put that in the bin" and they just chuck it out. Now that really goes against my grain... like if it's a day or two over the sell by date that to me is a guide not a licence to chuck it out... we go by the look of it, the taste and the smell and we always have... it's the way we were brought up and it hasn't killed us yet!'

Tony's account suggests that food safety labels have led to more wasteful and resource-intensive norms surrounding food waste and preservation practices. Narratives such as these cast light on the effect of changing policies and associated prescriptions in slowly configuring generational differences in standards about hygiene and safety, as well

as skills and modes of food wastage and preservation. Tony's narrative also highlights the 'stickiness' of practice dispositions embodied in early life [66]; older generations, socialised in the pre-food labelling culture, may be resistant to revising their personal standards and modes of conduct in light of the emergence of more recent policy prescriptions, instead continuing to rely on embodied forms of competence developed during their earlier lives. The importance of biographic experience for the formation of longstanding attachments to practices has been noted by others [35,56,67–69], with participants' accounts substantiating these findings. These results suggest a need for further research to explore how the intersection of policy with practice is mediated by biographic experience and may play out in generationally distinct ways.

4.1.2. Health policies

Health policies played a significant role in shaping discourses about health, hygiene and wellbeing which influenced participants' mobility and food practices. Like Plessz et al. [49], we found that individuals draw on and negotiate these prescriptions in reconsidering their conduct during significant life transitions, such as becoming a parent or receiving a health diagnosis. The analysis here provides additional insights into the role of intermediaries, including health experts and professionals, as important agents involved in the translation of health policies objectives into the lives of individuals and practices. For example, following her diagnosis with heart problems, Grace, aged 83 years, has been a regular attendee at Croi, a cardiac lifestyle support charity (see www.croi.ie). Over time, following the directions and guidelines of health practitioners, Grace has made significant changes to her diet to move away from a high meat and fat-based diet towards a chiefly vegetarian one:

> 'I follow the Croi recommendations. According to Croi, you're only supposed to eat, they're very particular about your diet, you're only supposed to eat … do you know a match box? Well that amount of cheese a week, and red meat – I have cut that out now.'

Accounts by other individuals revealed similar observations into how individuals draw on and negotiate health prescriptions in reconsidering their food and mobility prescriptions. In contrast to most (non-)energy policies, health policies promoting active living and wellbeing prescriptions were linked to less energy demanding practice, for example, promoting vegetarianism and active mobility [cf. also 50].

While the role of health prescriptions as a source of change featured in all participants' accounts, analysis suggests their influence is mediated by gender and social class. Overall, health prescriptions featured more prominently in women's narratives as a source of meaning, motivating their food and mobility practices as part of a broader project of reflexive and healthy living. Middle- and upper-class women were more likely to voluntarily seek out sources and information in media and health literature, especially during important transitional periods such as that of becoming a mother. For example, Sara's narrative reveals how she actively sought out and drew upon a range of prescriptions surrounding health, wellbeing, gender roles and caring in reconsidering modes and meanings of practice upon transitioning to motherhood:

> '*That period was the start of when I started going very purist and health-focused… I became very conscious of how I was doing things, thinking more holistically and purist you know… thinking about your own and your family's health and well-being…. Media-wise, I started paying a lot more attention and learning as much as I could, like health, cookery and housing programmes… and health, like your five a day, but more vegetables than fruit… I've reduced my use of chemical cleaning products, I mean you're just hammered by information these days… I do try to follow all of that.*'

Sara actively connects health and wellbeing prescriptions to her domestic consumption practice, with resulting influences on her mode of practice. Findings revealing the importance of gender as a mediating influence add to previous work highlighting class-based differences in

shaping how policy influences actions [49,50]. The analysis here suggests that categories of social difference appear to intersect [cf. 70,71] in producing differential patterns by which individuals connect prescriptions to practice. The analysis also supports other findings that health prescriptions often outweigh environmental considerations as sources of meaning and change in practice [50].

4.1.3. Work policies

Individuals' narratives revealed that their lives and practices are intricately woven into the reproduction and transformation of key societal institutions. In addition to health institutions, workplaces emerged as localised sites where broader meta-policy objectives intersect with the lives of individuals and practices. Participants' accounts shed light on the ways in which policy objectives and procedures of work institutions played an important role in configuring and promoting certain prescriptions around ideal conduct, with these prescriptions directly and indirectly shaping individuals' energy demanding practices, such as food and mobility. Changing prescriptions surrounding the good employee, appropriate working conditions, desirable skills and work-life balance, emerged as indirectly increasing resource-intensive energy practices. Many men stated that their work role became more stressful and temporally demanding, with implications for their domestic energy practices, for example, leading to increased car dependency and air travel, as well as reliance on labour saving technologies and convenience foods. These findings add practice-centred insights to scholarship highlighting spillover effects between work and domestic contexts [72–74].

Participants' narratives highlighted the role that work policies played in the promotion of a car-driving culture in Ireland. Over time, institutional work policies favoured the recruitment of employees skilled in car driving, with those with car-driving skills receiving promotions and financial benefits. Bridget, a 57-year-old mother of four adult children, who worked in a civil service job prior to her marriage, emphasised the impact having a car-driving licence had on her early work career:

> 'Having the car made a huge difference… I was able to use the car for work and get extra money. I got promoted in the health board… I was in the salary section… to do that job I had to be able to drive and they gave you travel expenses. So being able to drive was an asset. It increased your money.'

As Bridget's account highlights, benefits, symbolic and material, were promoted by institutions and accrued by those who were skilled in driving. Recruitment and promotional policies were implicated in the emergence of positive social prescriptions associated with car driving. Through these work-based policy objectives and procedures, the symbol of the car was increasingly linked to success and advancement at work. The company car was stressed by several men as a 'huge perk' and a symbol of their achievement and success. Access to these resources shaped increasing car dependency at home as well, with many indicating a rise in family trips taken in the car as they took advantage of subsidised petrol. In this way, the objectives and policies of work institutions actively intervened in the elements of car driving, shaping the emergence of car-centric meanings, forms of competence and resources, and contributing to the advancement and expansion of car driving in Irish society. In promoting an image of car driving as a symbol of progress and success, and in offering material benefits to individuals who had acquired the skills of driving, they promoted its expansion [11].

4.1.4. Education policies

In addition to health and workplaces, education emerged as a key site where policy intersects with practice. Narratives revealed that the technologisation of daily life [12] has been associated with a decline in the teaching of embodied skills associated with sustainable forms of production, such as sewing, knitting and food growing, leading to

intergenerational patterns of embodied competence and know how. Triona, a 53-year woman from a small community in rural Ireland, contrasts her own experience of schooling and education with that of current day children:

'The schools, they are not teaching them, as I do call it, "life issues". They are not teaching them how to live life, you know, they are teaching them how to do maths and Irish and religion and whatever else, but I don't think any child knows how to recycle, how to sew… they're teaching them the highfalutin stuff but they're not teaching them the basics! They can tell ya anything, but they couldn't tell you the basic things about how to survive from A to B. And it's the schools, it's the education system, it's all gone to how many honours you can get but there's no teaching of common sense or basic skills of life.'

Other work has highlighted the influence of neoliberalism and the rise of the knowledge economy in shaping changing priorities of educational institutions in Ireland [75,76]. Findings here further suggest that this has shaped generational differences in modes, skills and meanings of practice, leading to declining numbers of people skilled in less resource-intensive modes of domestic production. However, a surge of interest in reinstating these skills in children's learning curriculums has been an aspect of recent interventions into educational policy in Ireland. Initiatives such as the 'Knitting with granny' scheme, as well as food growing and energy demand reduction projects emerging from the national Green Schools programme (see www.greenschoolireland.org), focus on increasing recruitment of younger generations to more sustainable practices. Such programmes form part of a wider vision of educating young people to, once again, become producers and creators of practical things rather than solely consumers of manufactured goods, and they featured as an important source of intervention in the narratives of individuals with children.

4.2. Energy policies

In addition to the role of non-energy policies and prescriptions in shaping meanings and modes of conduct, all participants' narratives featured emerging influences of energy policies on conduct. As outlined, energy policies refer here to policies that are directly focused on reducing demand or encouraging pro-environmental conduct [3]. Examples include the three-bin wastage policy, the plastic bag levy and water policy charges. These largely neoliberal energy policies are enshrined in legislation and began to feature as sources of change within participants' accounts from the period of approximately 2000 onward. Within this section, interviewees' narratives are presented to illustrate and make more visible the ways in which energy policies intersect with practice norms and modes of conduct.

4.2.1. Re-shaping norms and legitimising demand reduction

More recent attempts to encourage demand reduction through energy policies are faced with the difficult task of intervening in high energy-intensive practice meanings and dispositions that have been reinforced over individuals' lives through intersecting (non-)energy policies and contextual forces. Like Sara, most individuals sought to disassociate from energy demand reduction practices that they conceived as outside the realm of normality, indicating that they have not altered their practice beyond what is required by government-led energy policies:

'I couldn't say people would see me as environmentally friendly because I'm not… there's something about thinking that oh "that's such a hippie kind of thing… that's for the tree huggers", you know…?…so I wouldn't be environmental in the sense of over and above the duties of the recycling or things you're required to do like plastic bags… and that has been kind of brought into the city, so everybody is doing that, you know recycling their plastics and their food waste and using reusable bags… but had recycling not been brought into Galway, would I recycle?

Probably not.'

Accounts such as Sara's reveal that energy policies are playing a crucial role in reconfiguring consumption norms and ideals and facilitating the constitution of a more widely and socially accepted political subjectivity rooted in ecological citizenship [cf. 77]. For most individuals in the sample, pro-environmental practices that have been promoted and legitimised by these more visible energy policies, such as three-bin waste recycling scheme and reusing plastic bags, were socially acceptable, while conduct that deviated from those practices was considered outside the remit of normality. These findings support other work that has established a link between normality and unsustainability [78] and suggest that policy plays an important role in configuring daily practice. They provide experience-based insights into the role that energy policies are playing in the emergence of more normatively accepted prescriptions around demand reduction.

4.2.2. Participation and intermediaries

Like non-energy policies, the role of intermediaries as important agents facilitating recruitment to modes of conduct promoted by energy policies featured in participants' accounts. For example, recruitment to a new three-bin recycling scheme was facilitated by recycling demonstrators who were trained and employed by the local council to visit people's homes and conduct demonstrations around 'correct' recycling practices in community settings. These intermediaries played a role in promoting individuals' recruitment to institutionally defined ideals around best practice, performing a 'middleman' role in the translation of policy objectives into the lives and practices of individuals:

'I remember the woman coming to teach us how to separate [waste]… she showed us what a brown bin…a green bin…a grey bin is, and the different types of waste that should and shouldn't go in them… they covered different types of plastic, glass…types of papers, what to do with shiny wrappers… all that kind of thing … I was thinking "oh Lord God, I'll never learn this". Imagine thinking that! You know no one likes change, and I was quite reluctant… And now I don't even remark on it… it's in my subconscious and I wouldn't dream of putting things into the one bin now. Just completely compliant. And if I was in a place that didn't do the 3 bins scheme, you'd kind of be like all your waste goes into one bin?! You would obviously be quite surprised. …so environmental considerations don't really come into it for me really… except for the compulsory ones…You know so the legislated ones are just there now, under my subconscious. I don't even think about them now… they're just kind of there under the surface now.'

Sara's description highlighting the process by which new pro-environmental practice norms and expectations enshrined in recycling policy became internalised as '*subconscious*' provides interesting insights into the contexts and processes by which energy policies can work to reshape personal dispositions, meanings and standards. While many individuals highlighted their initial resistance to the introduction of mandatory energy policies, their views changed as they participated within the practice. As their participation increased, the practice became habituative and a reformulation of dispositions occurred over time. In this respect, intervention-based energy policies, by providing a context in which individuals are legally required to participate in a practice, have the capacity to shape dispositions, personal meanings and modes of conduct.

4.2.3. Shaping household discourse and reconfiguring links between practices

Analysis of participants' narratives also shed light on the ways in which policy shapes public discourse and prescriptions surrounding action at the level of household social interaction. Public debate about the introduction of water conservation charges[1] [cf. 79–81] were ongoing at the time of the interviews and this featured in many individuals' narratives, providing an interesting data for exploring how

policy intersects with household practice and discourse. James and Trish, a middle-aged couple, were actively engaging with their teenage children in a discussion about how water-related household practices could be changed over the coming months in order to conserve water consumption:

James: *'so that whole water thing that's going on now, until now it's something we haven't thought too much about… But now we're all looking at our water practices… one of the things that will have to change is how much washing we do which is also another energy use.'*

Trish: *'like Sam (son), a typical teenager, he's become obsessed with hygiene and being clean, you'll go to pick up his laundry and every day there's another full set of clothes worn once… so they're going to have to start wearing clothes at least twice…'*

James: *'So we're talking about things like that now and how long are you going to be in the shower once things change…'*

Trish and James' discussion highlight how policy prescriptions and measures, in this case relating to the introduction of new water charges, intersect with household practice. Furthermore, their conversation illustrates the links between practices in daily life; changing meanings and modes of water practices will require intervening in a range of water-related practices, including laundry, showering, and other personal hygiene practices, as well as broader standards of cleanliness. Public debate about impending water charges stimulated participants to reflect upon and question unsustainable ideals of water-related practices and norms.

4.2.4. Appropriating and resisting policies

In a similar vein to non-energy policies, analysis suggests possible patterns of social differentiation regarding the extent to which energy policies are appropriated or resisted by individuals. Participants in the sample from lower socio-economic backgrounds were more likely to express a distrust of policy and demonstrate resistance to it. Triona, for example, voiced very hostile views towards the introduction of the three-bin scheme:

'Well I honestly think with the environmental issues… I think with all our recycling and our green and our everything else they [policy makers] are making us do, a lot of it is absolute bull… and I know for a fact a few on the road feel the same… an awful lot of people are kind of saying…they don't believe it and why should we believe them?… we would have a brown bin collection here the same day as the black bin but… but it's the same two fucking drivers, they collect the black bin first and then come back for the brown bin…it was going into the same container so we said why would we bother?… I think an awful lot of people think there is an awful lot being pushed at us… people just don't have the time and… don't have the space to be doing different things they want us to do.'

Triona's narrative suggests that she belongs to a community of practice where distrust and resistance towards expert prescriptions are normalised and actively practiced. Framing narratives in a 'we' and 'they' dichotomy were common in these accounts as a way of conveying a feeling of disconnection from policy processes that were perceived as out of touch with the lived experience and contexts of their lives.

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[1] Water charges were introduced by the Irish government for the first time in 2015. The policy formed part of a broader water sector reform programme aimed at encouraging water conservation as well as establishing a water utility that could finance a heavy programme of investment in water infrastructure. The controversial policy received widespread coverage in Irish media with vocal proponents and supporters on either side. Following the introduction of the policy, there was a high level of non-compliance and several large-scale protests in relation to water charges, with commentators highlighting a 'serious disconnect' between policy design and implementation as a key issue delaying effective implementation. The policy has been withdrawn and is currently being reformulated into a water conservation policy.

Participants expressed concern that policies were formulated with the ideal middle-class citizen residing in a detached house in mind. For example, Frank discusses the challenges his mother faced implementing the three-bin scheme, living in a terraced house:

'Some people find it hard to come on board with it because they (policy makers) have not considered their circumstances. For example, my Mum, now we have never had much, and we live in a terrace house in Santry, there are four houses together, so we're in the terraced house in between a house on either side and the garages. And my Mum now finds it very difficult and she has refused it, she has never, never did have three bins outside the door, because she can't bring them through the house.'

These findings resonate with previous work highlighting class-based differences in trust in expert systems more generally [82, 83], and appropriation of consumption prescriptions more specially [49]. They suggest an important link between patterns of social inclusion and exclusion and the processes by which policy shapes energy practices.

5. Concluding discussion

This paper responds to recent calls for research to increase the visibility of (non-)energy policies on demand. A review of extant research in the emerging (non-)energy scholarship reveals that little is known about the everyday contexts and processes by which policy intersects with demand through lived lives. This paper has sought to build on recent (non-)energy policy research to advance a situated, practice-theoretical approach to exploring the interaction of policy and domestic energy practices. In this final section, we consider the implications of the argument and findings for scholarship and policy. In doing so, we call for a broadening of the (non-)energy policy research agenda [3,18] to include a line of inquiry focused on experience-centred approaches and suggest some tentative directions for future inquiry.

As outlined, a key reason for the lack of understanding of the role of (non-)energy policies on demand relate to the conceptual and methodological challenges associated with representing and analysing their influence. Dominant approaches have been ill-suited for capturing situated insights and dynamic contextual forces. As has been recognised, new research tools are needed to illuminate and make visible the effects of (non-)energy policies on demand [3]. While SPT approaches have made significant advances in highlighting the limitations of dominant approaches, much less work has focused on the implications for studying the intersection of policy and practice in energy-systems dynamics [21]. This paper advances a novel experience, practice-centred approach to place routine, everyday practice as an important site through which we can begin our analysis. The influences of 'traces of policy' on individuals' action emerged inductively in the data generated through the biographic research approach, pointing to the importance of exploratory, dynamic and experience-centred work for uncovering new insights into processes and contexts of change that remain overlooked or obscured in dominant approaches or higher level perspectives.

The findings of this study suggest that while the specific impact on energy demand differs between non-energy and energy policies, the processes by which policy intersects with action share similarities across the two categories. Regarding impact on demand outcomes, analysis suggests that non-energy policies across health, education and work-based institutions have largely been implicated in the emergence of increasingly demanding energy meanings and modes of conduct. More recent attempts to intervene in demand through more visible energy policies face the difficult task of shifting entrenched energy-intensive dispositions and practices. Across both categories, the findings highlight the important role of policy in the constitution of normality and unsustainability [77,83] and to a crucial role for (non-)energy policy to support the emergence of 'envirogenic environments' [10] that promote demand reduction.

Building on tentative work [49,50], the findings provide nuanced insight into the multiple contexts and processes by which individuals negotiate, appropriate and resist policy measures in considering their practice. They suggest that policy intersects with the lives of individuals and practices through the various institutional sites in which individuals' lives are embedded, including formalised and tangible institutional sites relevant to daily living, such as those of hospitals, doctors' offices, schools and workplaces. However, the influence of (non-)energy policies also surface in homes, social interactions and in many more intangible relational spaces of everyday life. Situated in the realm between policy and individuals, the findings point to an important role played by intermediary actors in mediating the circulation and translation of policy priorities and objectives into lived practice. Such findings highlight a need to broaden the scope of analysis to better understand the influence of a wide range of intermediaries beyond those typically considered relevant for energy policy implementation (such as engineers or recycling demonstrators) to include teachers, health professionals, employment managers and other governance stakeholders, as important actors in the policy-practice nexus.

In overlooking the role of individuals as integrators of practices in the context of their daily lives, extant (non-)energy policy scholarship has neglected to consider how power and social difference mediate the means by which policy steers action [cf. also 12]. Experience-centred approaches have the potential to generate novel empirical insights into how categories of social differentiation (including class, gender and age) intersect to shape the patterns by which individuals negotiate policy measures in their practice. The findings presented in this paper raise the possibility of an important link between patterns of social difference and exclusion and the processes by which policy shapes demand. Narratives highlighting distrust and resistance towards policy measures and prescriptions among certain socio-demographic groups suggest that attempts to change practice through directed energy policies could backfire without consideration of how policy intersects with lives in differentiated ways. This raises important questions concerning how policy can be reflexively formulated to mitigate distrust and resistance. Future work could usefully consider how policy in non-energy policy domains can be formulated to produce less explicit prescriptions to facilitate sustainable practices as well as the role of intermediaries across diverse institutions in implementing these.

Despite the clear potential of situated, narrative-biographic forms of inquiry for progressing experience-centred work in the field, they are not without their limitations. Like other methods, they throw up issues relating to internal and external validity that must be considered during the research process [cf. 84]. The retrospective orientation and elicitation of experiences and actions occurring in the past can pose challenges to the internal validity of the data. With this in mind, the inclusion of multiple methods and a phased methodological approach was employed to increase internal validity, providing participants with numerous opportunities to express their experiences, meanings and opinions on the research topic. Regarding external validity, a key limitation of the study concerns the small sample size. While the findings allow for theoretical generalisability, given the relatively small and homogenous sample,[2] it is questionable how applicable they are to other contexts. The findings presented here point to possible patterns and processes that warrant further exploration, concerning, for

example, social differentiation regarding how policy intersects with practice. With regard to considering their transferability to other contexts, it is plausible to hypothesis that while the patterns of action would differ, the processes and mechanisms shaping dynamics would remain consistent [cf. 56, 57]. Further research may usefully explore other areas of resource consumption as well as different policy contexts in other countries to discern whether they demonstrate similar processes by which policy intersects with practice.

In considering the policy implications of this work, we join Butler et al. [25,85] in calling for a more reflexive approach to energy-systems governance. While calls for integrated governance are not new, much less is known about the effective means of implementing this in practice. As Royston et al. [3: 131–132] state: 'even when…policy makers recognise that non-energy policies matter for the constitution of energy demand, they know very little about precisely how, or about what could or should be done in response'. We argue that a social practice theory perspective holds much potential. Positing everyday life and practices at the centre of analysis necessitates a redrawing of existing silos. In considering practices as the unit of analysis and individuals as the crossing point of many practices, practice-centred approaches have the potential to advance cross sectional policy influences on dynamics of demand. Monitoring long-term and emergent influences of policy on action is a crucial facet of a reflexive approach to governance. There is a need for impact measurement approaches that are capable of shedding light on emergent, intersecting influences of a range of policies on action as they play out over extended time frames. As the results of this study illustrate, the type of robust, contextualised insights that emerge from experience-centred, dynamic forms of practice-inquiry hold significant potential for illuminating complex processes and contexts of change. Yet, little work has explored how context, intersectionality and difference mediate the intersection of policy and practice. We call for a broadening of the (non-)energy policies research agenda to connect systems-and everyday life perspectives to explore these processes.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.erss.2019.101331.

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[2] While efforts were taken to incorporate diversity in the sampling strategy across social class, age and gender, nevertheless the sample in this study was relatively homogenous. All respondents were indigenous white homeowners living in traditional heterosexual households. Future research could potentially explore more diverse living circumstances and arrangements, for example, less traditional relationships, younger cohorts as well as share and renting households. The results of this study point to patterns of generational difference in meanings and modes of conduct, suggesting that investigating the experiences of younger cohorts could reveal patterns and perspectives not captured in this study.

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