



Using the Cultures Framework for Policy Analysis

INTRODUCTION

One way to help achieve a more sustainable future is through the development of new policies or other interventions designed to change unsustainable cultural ensembles or maintain sustainable ones. By policy, I refer to intentional actions by governance agencies to achieve different outcomes from the status quo. Policy interventions typically include regulations, incentives, subsidies, information campaigns, nudge techniques and social marketing that seek to change behaviour or encourage the uptake of new technologies.

Cultural analysis has much to offer policy development. Almost every study using the cultures framework has concluded by discussing the policy implications of this form of analysis. I have also used it myself, along with my research teams, to develop policy advice from two major research programmes in New Zealand. This gives me confidence in proposing the cultures framework as a helpful analytical approach for policy development. For those readers who have come straight to this chapter, the cultures framework is described in detail in Chapter 4 but in brief it presents culture as comprising three core elements—shared or common ways of thinking and knowing (motivators), doing (activities) and having (materialities). These elements and their interactions comprise the cultural ensemble of any given group of actors (households, businesses, etc.).

A cultural analysis can show, for example, why the adoption of new technologies is rarely as straightforward as might be suggested by a cost–benefit analysis or consumers’ stated preferences. As the previous two chapters have illustrated, a cultural perspective shows how any decision regarding a new technology is affected by actors’ cultural ensembles—including the ideas and experiences deriving from people’s past (as with the battery example in the UK), and the current cultural ensembles into which the new technologies would need to fit (as with the PV example in Switzerland). Decisions are influenced by other cultural factors such as internally conflicting motivators (as with Norwegian households and energy efficiency), practices that align with current technologies (as with the US Navy and with timber companies in New Zealand), and shared beliefs that dismiss alternatives (as with car-centric young people in New Zealand). Decisions are also shaped by wider prevailing cultures and structures that support the status quo (as with freight drivers and households in fuel poverty in New Zealand).

In this chapter, I describe examples of policy advice that have been developed from research using the cultures framework, mainly relating to energy and mobility issues. I discuss examples of integrated policy development that have used the cultures framework at every stage from data gathering to the design of interventions. I propose a series of steps that can be followed to develop policy using the framework and outline how the framework can be used to underpin policy evaluation. I start by discussing the extent to which culture is usually a consideration in policy development.

POLICY FOR A SUSTAINABLE FUTURE

Policy development is generally still strongly shaped by economic theories. Neoclassical economics assumes humans act rationally to maximise their utility. Through this lens, many human behaviours are mystifying. Why don’t people’s actions align with their professed beliefs and attitudes? Why don’t people act to optimise their financial situation, or act in ways that align with their knowledge of the consequences of their actions? Behavioural economics, a derivative of neoclassical theories, seeks to explain such conundrums by introducing the idea that people’s decisions can be shaped by their heuristics (mental decision tools) and systematic biases, as well as the context in which a decision is made (Reisch, 2017). Behavioural economics has been strongly influential in

policy development over the past decade, particularly nudge theory, which focuses on making the ‘right’ decision the least taxing one (Thaler & Sunstein, 2008). Through these lenses, policies and other interventions that are intended to change human behaviour assume that humans are self-interested, lazy and economically driven. Furthermore, responsibility for the sustainability crisis is predominantly presented as an individualised problem—that it is caused by people making poor decisions in their everyday lives. Organisations, powerful actors, ideologies and institutions that maintain the status quo are largely exempt from consideration.

Accordingly, mainstream policy development focuses on influencing individuals’ choices. It assumes that people can be persuaded to do things differently if the price is right, and if they have sufficient information, and that the ‘right’ decision is less effort than the wrong one. Human decision-making and behaviours are undoubtedly shaped by economic optimisation, knowledge and predictable psychological reactions ... to a point. What is missing is the fact that people rarely act as entirely independent beings—our responses to external influences such as policies are shaped by the cultures of which we are part. As the studies discussed in Chapters 5 and 6 have shown, people can be locked into relatively unchanging cultural ensembles due to the positive dynamics between their motivators, activities and materialities. External influences other than the new policy may also be tending to reinforce that cultural ensemble. To take an obvious example, people who are locked into car cultures through good roads and plenty of car parks are unlikely to be strongly influenced to change to cycling by a line on the road that marks a cycle lane.

Policy development is also often aimed generically at a population, rather than targeted to groups with different characteristics. Shortcomings with one-size-fits-all policies are revealed by a review of household energy efficiency interventions in developed nations which found that 90% of interventions took a general population approach, but that those interventions that featured segmentation, targeting and tailoring were more effective (Russell-Bennett et al., 2019). Another study of the uptake of low-carbon technologies and behaviours concluded that ‘policymakers of all types ought to move from a focus always on individuals to a recognition that group-based and collective phenomena—such as culture—shape and influence aspirations, capabilities, and agency for low-carbon transitions’ (Sovacool & Griffiths, 2020: 9).

More fundamentally, sustainability transitions will not be achieved through incremental approaches, but instead will require rapid transformational changes at multiple scales beyond individuals. Scholars of socio-technical transitions, for example, understand them as involving transformational changes across multiple actors and multiple dimensions including technologies, markets, policies, industries and civil society (Geels, 2012). Transition processes are sometimes framed in techno-economic terms, focusing on the role of resource flows and technological developments along with evolutions in markets, or in political terms, focusing on the roles of policies and political actors (Cherp et al., 2018). Transitions theories have made significant strides in illuminating aspects of the complex changes involved in achieving a sustainable future, but I believe they are hamstrung by not adequately accounting for the workings of culture in both resisting and driving change.

Culture is most visible in socio-technical framings of transitions, but is considered as a minor factor if at all. Where culture is included in analysis, it is equated to symbolic meaning (Geels, 2002), visions and values (Geels, 2005), belief systems (Geels et al., 2007), discourse and public opinion (Geels, 2011), and with collective sense-making (Geels & Verhees, 2011). While these are all important aspects of culture, they confine its interpretation to the cognitive realm rather than its entangled existence with the physical and active dimensions of culture. They also fail to account for how culture can operate structurally to maintain unsustainable regimes. I believe policy-making needs to grapple with how to support the transformation of existing regimes, and that this will require a better appreciation of the influence of culture in supporting the status quo, as well as its transformational potential.

The examples in Chapters 5 and 6 show why an understanding of socio-cultural processes is critical for the development of sustainability-oriented policy and/or other interventions for change. They illustrate the constraining influence of actors' existing cultural ensembles, whereby an idealised choice may have a poor fit with what people or organisations already have, think and do, as with batteries in UK households. The examples show how policies may fail where multiple external influences reinforce an existing cultural ensemble, so that a single policy signal may play only a minor dissenting part in a loud chorus of support, as with automobility. They show how actors' choices are constrained by the limited scope of their agency, as with households in energy poverty. Policy approaches that fail to account for culture may fail to anticipate

consequences, such as for gender equity in Zambia, may have regressive impacts as with slum rehabilitation housing or may result in more extreme change than anticipated, as with solar lighting in Vanuatu. The examples also show how cultural change can unexpectedly occur despite a non-supportive policy environment, as with PV uptake in New Zealand, or can reshape the policy environment, as with the growth and mainstreaming of fossil fuel divestment. By becoming more aware of the transformational possibilities of culture as well as the way culture can act as a constraint and a structure, a cultural analysis can help avoid ‘unjust, hegemonic, or narrow narratives of development and implementation’ (Sovacool & Griffiths, 2020: 9) and can open up possibilities for policy actions that support transformational change.

A focus on culture rather than individual behaviour invites a different policy development approach. Behaviour invites policymakers to consider changing what people do. Culture invites a focus on why and how they do it within their social context. A cultural approach recognises that people are neither completely individualistic, autonomous and anarchistic, nor completely socially homogenous, socially fettered and socially dependent. They have some freedom to make choices, but the scope of their agency can be limited. People’s responses to policy can be constrained both by their existing cultural ensemble and by the multitude of external influences that reinforce that ensemble. A cultural approach can also help reveal heterogeneity across populations, so that policies can be better targeted to groups of actors who have similar motivators, activities and materialities. Additionally, culture opens the door to analysis of cultural processes at multiple scales, including considering the roles of powerful institutions and actors, and the role of culture within policy agencies themselves.

The implications for policy of many of these ideas are already articulated elsewhere, such as the interplay between agency and structure (Sandfort & Moulton, 2020), the adoption of innovations (Berry & Berry, 2018), the constraining effects of practices (Sahakian & Wilhite, 2014; Shove, 2014) and the governance of socio-technical systems (Borrás & Edler, 2020; Geels et al., 2017). The cultures framework provides an alternate perspective that can complement these approaches (e.g. Ford et al., 2017). It can also be used as a framing for policy analysis in its own right, which is the topic of the rest of this chapter.

APPLICATIONS OF THE CULTURES FRAMEWORK TO SPECIFIC POLICY QUESTIONS

The cultures framework has been used to inform policy recommendations over a wide range of topics. The following examples illustrate how the framework can be used and the kinds of policy recommendations that have emerged from a cultural analysis.

Improving Driving Efficiency

One of the central hypotheses in mainstream policy-making is that people fail to make the right choices because they have insufficient knowledge. A study using the cultures framework reveals one of the flaws of this assumption (Scott & Lawson, 2018).

Efficient driving is a zero-cost way to reduce fuel use by 10–20% without significantly increasing trip times. The study authors carried out focus groups with drivers, asking about their driving practices and their knowledge of efficient driving. In every case, the participants knew cognitively what was involved in driving efficiently—they were well aware of the techniques involved—but said that they rarely did so in practice. Clearly, information campaigns would not make a difference here. Relating this to my discussion of cultural learning in Chapter 4, participants appeared to have semantic knowledge but not bodily knowledge relating to driving efficiency. Their driving patterns were dominated by the inefficient driving skills that they had learned and embodied, not their cognitive understandings of efficient driving. The research also showed that participants rarely connected their driving practices to carbon emissions. If they did drive efficiently, it was usually linked to cost-saving rather than environmental concerns.

The researchers proposed three types of intervention, all seeking to change aspects of driving culture. Relating to material interventions, they considered that some drivers would respond well to in-car smart feedback devices that highlight the real-time fossil fuel consumption or emissions. The second proposal was to develop a link between knowledge and outcomes through social marketing messages that showed how driving practices have a significant effect on carbon emissions and therefore on climate change. Third, they recommended that mastering efficient driving skills should be one of the requirements of gaining a driver's licence, and that advanced classes in driving efficiently should also be offered (Scott &

Lawson, 2018). Relating this to my discussion in Chapter 4 about the different pathways through which culture is learnt, this would build up efficiency routines as bodily knowledge, complementing drivers' semantic knowledge of efficiency but being able to be drawn on without cognitive effort.

Reducing Energy Injustices

A cultural analysis can also help avoid inequitable or unjust outcomes from interventions. This study of energy injustices in slum rehabilitation housing developments has already been outlined in Chapter 5 (Debnath et al., 2021). One of its intentions was to support the design of just policy, with a particular focus on Sustainable Development Goals 3 (good health and wellbeing), 7 (clean and affordable energy) and 11 (sustainable cities and society). The analysis revealed interdependencies between the design of the rehabilitation housing, the resulting energy cultures of the communities and the distributive injustices arising from this. The qualities of the respective built environments were found to be a crucial distributive justice factor, along with affordability and quality of appliances.

Policy recommendations from this investigation of energy cultures covered three types of intervention. First, the design of transitional housing should support the cultural identities of the relocated communities, as the evidence showed that the forms of rehabilitation housing altered their energy cultures in ways that created injustices. Second, the governance of energy utilities and their interactions with households (administrative lags, irregular billing cycles, low power quality) was another cause of injustice for low-income households and required policy intervention. The third policy consequence was to support households to switch to cleaner fuels, as the households currently dealt with their energy insecurities by utilising multiple fuels including firewood, kerosene and LPG as well as electricity, with resulting health implications from their use indoors. The research also found that community-driven initiatives (e.g. refrigeration sharing, rooftop solar) could help alleviate some inequities, as could the availability of affordable repair and maintenance shops for appliances.

From a cultures framework perspective, the first two policy recommendations are addressing structure-like external influences on energy injustice—one relating to built infrastructure and the other to business practices. Only the third policy would directly interact with households,

yet all are critical to overcoming energy injustices and attaining the relevant Sustainable Development Goals.

Policy to Address Energy Poverty

Several studies have used the cultures framework to help understand the multiple dimensions of energy poverty, and from this have recommended policy interventions that would assist in achieving greater energy wellbeing. A study in southern Chile examined the energy cultures of households in energy poverty, and among other things it identified the key role of firewood in heating and cooking. There was also a wider culture beyond individual households, involving the livelihoods of small local firewood retailers. Current policies focused on providing access to electricity and did not account for the implications of many households being largely reliant on firewood, nor the indoor air pollution arising from this. Policies also failed to account for the historically contingent forms of housing or the implications of local climatic conditions. The authors called for a context-sensitive approach to policy that accounted for local energy cultures. This would include participatory decision-making to help design policies that recognise and integrate citizens' energy culture and to use this to underpin the design of culturally appropriate energy efficiency programmes (Cortés & Amigo, 2022).

Another household-based study used the cultures framework to gain a more comprehensive understanding of energy poverty beyond the usual narrow triad of income, housing and energy appliances (McKague et al., 2019). The analysis revealed the heterogeneity of experiences of energy poverty. A household's vulnerability to energy poverty is shaped by a wide range of factors including their cultural ensemble, agency and external influences, and is experienced in many different ways. Interventions are unlikely to be effective if they just focus on one aspect of the problem, such as winter fuel payments that assume the main problem is lack of income. The study findings suggested, for example, that people who spend extended amounts of time in the home, such as the elderly and families with young children, would benefit from direct interventions for material improvements, such as subsidies for heating and insulation. Those who would benefit by using energy more efficiently could receive customised home energy advice, for example regarding energy-saving practices and small cost-effective investments. Better understanding of the

energy cultures of households can help to design targeted interventions for groups of users who may be demographically similar but experience energy poverty in diverse ways.

Reducing Peak Demand

The variability of electricity demand is an important sustainability issue because peaks in demand in electricity networks often need to be met with fossil-fuelled power generation. In many nations, morning and evening peaks in demand are mostly driven by activities in households, so understanding these activities is an important first step in reducing demand peaks and thus reducing carbon emissions. Studies on the causes of household peak demand are typically complex and expensive to undertake and require detailed energy consumption data, and most such studies to date have been undertaken in developed nations. In many developing nations, the electricity grid is quite vulnerable to brown-outs or black-outs when demand peaks cannot be met by supplies, and understanding the drivers of demand peaks would assist in reducing this vulnerability. However, detailed consumption data is rarely available due to the absence of smart meters, so the costs of peak demand studies may be prohibitive.

A relatively low-cost approach that did not require half-hourly consumption data from household meters was developed in Bangladesh based on the cultures framework (Khan, 2021). Through surveys with householders, Khan collected data on factors that have the potential to affect the timing of electricity demand, including material aspects (e.g. appliances, cooking fuels, house size), practices (appliance use, energy-saving behaviours), motivators (knowledge, aspirations, attitudes) and demographic characteristics. Through analysis using the demand profile of appliances and reported patterns of practices, he found that some households had markedly higher consumption than others during periods of peak demand on the overall grid. The two biggest contributors to peak demand in households were rice cookers and the use of air conditioning. The ‘peaky’ households were mostly larger, had more electrical appliances, were owner-occupied, and had higher incomes and more children. These households were more concerned about the environment but less interested in reducing consumption to save money than non-peaky households. Khan concluded that the best policy response would be to introduce efficiency standards for rice cookers and air conditioners

to reduce demand, since given the daily routines of households it would be very difficult to shift the timing of demand (Khan, 2021).

Domestic Water Use

The cultures framework has also been used as an integrative model across multiple data sets to support better policy development (Manouseli et al., 2018). In the UK, domestic water supplies are challenged by climate change, and there is a need to develop evidence-based drought scenario models for the purpose of water management. There was limited evidence available on the factors driving domestic water use in drought and non-drought circumstances. This study used the cultures framework to underpin integration of the available evidence on interactions between social norms, practices and materiality. The framework enabled them to link data on motivators (such as comfort, cleanliness, garden ‘greenness’), practices (when and how water was used) and materiality (water-using devices, water-saving devices, metering). This revealed the existence of distinctive water cultures across the population with different levels of water demand. From a policy perspective, the authors suggested that these cultures would have different responses to price changes, media messaging, new technologies or drought management interventions, so policies would ideally be targeted to the different water cultures. The cultures framework thus acted in two ways to assist with the research—as an integrating frame for multiple data sets, and to identify the heterogeneity of water cultures as a basis for policy design.

Energy Technologies and Collective Action

A cross-national European study compared countries’ policies that supported collective action for low-carbon energy transitions (Carrus et al., 2019). Case studies were undertaken in six countries and identified similarities and differences in energy cultures in respect of the uptake of electric mobility, smart energy technologies and energy-efficient buildings. In most cases, adoption was associated with strong environmental motivations, a strong social support system and clear financial incentives. Common barriers to change were legal uncertainties and bureaucratic burdens for individuals and groups wanting to start initiatives.

Success in implementing collective action was related to factors within actors’ cultures as well as to country-specific external influences.

The study confirmed the importance of designing policy that recognises cultural heterogeneity. Recommendations included addressing the policy culture (e.g. harmonising different regulatory frames, congruence between national, regional and local policies) and resetting the policy context so that collective initiatives could flourish (e.g. active support of initiatives, easy access to funding). Some recommendations were country specific, and others were generic policy recommendations to support collective approaches by private citizens and businesses.

These examples reveal how cultural analysis can assist in more effective policy development. Policy developed with a lack of understanding of culture may be unsuccessful and even regressive. Financial or information-based policies can only influence certain aspects of cultural ensembles and cultural learning, and may be ineffective due to resistance derived from other aspects of culture. The examples reveal how a cultural approach differs from a demographic approach to policy design, in that it accounts for what people think, have and do. They show the importance of designing policy to suit existing cultures, whether that is at a national scale or focused on locally specific cultures that have a particular relationship with place-based resources. Even well-intentioned policy interventions can bring about or worsen injustices if they fail to account for culture. The examples show the importance of supporting and enabling initiatives that are already working towards sustainable outcomes. Finally, they draw attention to policy culture itself, and the importance of congruence between regulations and between national, regional and local policies in order to support sustainability transitions.

UNDERTAKING A PROGRAMME OF POLICY-RELEVANT RESEARCH

Policy development needs to be supported by data, which will often need to be derived from research. In this section, I describe how the Energy Cultures research teams used the cultures framework to underpin the development of policy advice in two tranches—a three-year research programme ('Energy Cultures 1') culminating in a policy report in 2013, followed by a four-year programme ('Energy Cultures 2') culminating in a policy report in 2016. This is not to say that multi-year research programmes are always needed; the purpose here is to explain how our teams undertook these programmes of policy-relevant cultural research.

Energy Cultures 1

Our 2013 policy report, based on three years' research on barriers to energy efficiency, focused on research-informed interventions to enhance household energy efficiency (Barton et al., 2013). It may be useful to refer back to the figures in Chapter 4, especially Figs. 4.4 and 4.6, to visualise the following discussion.

The research underpinning the policy advice examined different aspects of relevant cultural ensembles and their dynamics. Some of this work has already been individually reported in earlier chapters, but it is important to show the scope of the programme as a whole. Household interviews on the links between their values and energy-efficient behaviours explicitly looked at the motivator-activities dynamic of the cultural ensemble. Choice modelling explored people's preferences for various attributes of heating and hot water systems, explicitly looking at the motivator-materiality dynamic, and identified clusters based on the dominant preferred attributes. A national survey of households gathered data on motivators, activities and materiality of a representative sample of households. This enabled (among other things) the identification of four main clusters of household energy cultures differentiated by cultural features relating to energy efficiency. Focus groups and surveys explored householders' perspectives on what and who stimulated them to make an efficiency change, identifying cultural vectors as well as internal and external drivers of successful change. Other interviews looked at barriers to a particular efficiency change. A community-based trial studied the different outcomes from two different forms of information-based interventions with households. Studies of law, policy and performance standards identified external influences on the efficiency of household practices and materiality.

The cultures framework thus supported an interdisciplinary, integrative approach to data acquisition and analysis. A range of different research methodologies produced qualitative and quantitative data on the energy culture of New Zealand households, and the findings were then integrated to develop policy-relevant insights. The policy recommendations included proposed changes to law, standards, subsidies and policies for the population in general to make culture change easier; advice targeted to the different clusters of energy cultures; and interventions crafted to better support the journeys that households undertake in adopting new practices and material items (Barton et al., 2013). The specifics of the advice

can be found in the policy report; however this is not necessarily transferable to other situations given that it is, after all, a cultural study, particular to time, people and place. What *is* transferable is the approach outlined here, of using the framework to underpin the design of multiple pieces of research that explore different variables and their dynamics, which are then triangulated and integrated to develop policy recommendations.

Energy Cultures 2

A subsequent programme of research used the cultures framework to explore two topics that had been put forward by our primary funder, a government agency (Stephenson et al., 2016). One question was about how to leverage energy savings in homes, small businesses and transport, and the other was about ways to encourage consumers to adopt energy-efficient transport options, and how to encourage markets to deliver them.

Unlike the previous research programme, which focused on household energy efficiency, the research team in this case was asked to deliver on several outcomes (energy savings, energy efficiency, technology adoption) across several sectors (households, businesses, transport users, markets and policy agencies themselves). Accordingly, rather than a single integrated research design, we applied the cultures framework to designing a number of parallel research projects working in each of the sectors. Similar to Energy Cultures 1, this involved researchers from multiple disciplines applying a range of methodologies. The framework provided a common ‘language’ for all researchers and was a connector across all of the projects, enabling us to share insights about cultural dynamics even where instrumental findings were sector specific.

The interdisciplinary research underpinned the development of policy briefs that took a cultural approach to improving efficiency, warmth and comfort for households, including those in fuel poverty; improving energy efficiency and eco-innovation in businesses; improving uptake of electric vehicles; improving driving efficiency; improving efficiency and emissions from urban freight; increasing uptake of multi-modal mobility; and implementing interventions for a sustainable transport future. Despite the variety of topics, the research revealed generic cultural dynamics that have been discussed earlier, including actors becoming locked into patterns of behaviour and the interplay between internal (actor-initiated) changes and external (often policy-related) influences. Policy settings

that consistently support sustainability-oriented motivators, activities and materiality can lead to ongoing journeys of transformative change, while the wrong settings can direct this journey in an unsustainable direction. Misaligned policy settings are also problematic, as they can set up an environment where there is ambivalence and indeterminacy for sector actors.

Another generic finding across the programme of research was that unsustainable cultures operate at multiple scales, and that the most intractable and problematic cultures may be operating at very broad and influential scales, including within the policy sector. In the Energy Cultures Policy Briefs, we proposed that a culture change was required within New Zealand's various transport policy and implementation agencies in order to achieve a sustainable transport future. To achieve transformational change, those responsible for policy and governance needed to turn their minds to interrogating and adjusting their own cultures—to becoming aware of the ideologies that underpin their work, the languages they use unconsciously, the values implied by their funding decisions and the practices that they have absorbed unquestioningly from their peers.

A GUIDE TO USING THE CULTURES FRAMEWORK FOR POLICY DESIGN

Policy development through the lens of the cultures framework invites questions such as: *What features make up the cultural ensembles in the sector we wish to influence? Can we identify different cultural clusters that might require distinctive interventions to avoid inequitable outcomes? Is the outcome desired by policymakers a good 'fit' with the culture/s? Is the culture changing already to give the desired outcomes, and if so what can we do to support that change? If cultural features are poorly aligned with the desired outcomes, might there be a backlash against the policy or unintended consequences? What might be the knock-on effect of changing one aspect of the culture – would other aspects change too, and would that have beneficial outcomes?*

So how might policymakers use cultural analysis to support the development of policy interventions for a sustainable future? In this section, I offer a guide on using the cultures framework for policy development, drawing from my own experiences and those of teams I have worked with, as well as from insights from others' use of the framework as discussed in the first part of this chapter. I begin with a high-level discussion of how

the framework can structure a logical process of analysis, followed by a step-by-step guide. I have tried to make this relatively self-explanatory but, for deeper explanations of terms and concepts, readers should refer to Chapter 4.

General Concepts

A policy intervention is often thought of as an intention to change behaviour of sectoral actors to achieve certain outcomes for the greater good. The cultures framework recasts this as an intention to change aspects of an unsustainable culture, which will result in consequential changes to sustainability outcomes. It depicts a policy intervention as a purposeful change to an external influence. To be effective, this needs to result in a change to the relevant actors' cultural ensemble (motivators, activities and/or materiality), and thereby the desired change to the sustainability outcomes.

A premise of the framework is that, in relation to any given outcome, there will be clusters of actors with similar cultural ensembles and similar sustainability outcomes. Previously discussed examples include distinctive cultural clusters in relation to mobility, household energy efficiency and water consumption. Policy analysis using the cultures framework takes an interest in the features of cultural ensembles that have some causal relationship with the issue of concern, any notable heterogeneity across the ensembles and the membership of clusters of similar cultural ensembles.

In investigating culture for policy, we are thus looking not at what is typically counted as culture by lay people, but at patterns of associated motivators, activities and material items that give rise to the outcomes that are of interest. In this sense, the cultural ensembles to be investigated will differ depending on the outcome under study. Cultural characteristics relevant to travel-related greenhouse gas emissions, for example, will likely differ markedly from characteristics relevant to the sustainability of people's food choices. So what culture is for one question is different to what it is for another, and it is important to keep an open mind on this. Rather than looking in the first instance to design policy for a seemingly obvious group of actors, a better starting point would be the outcomes of interest, followed by an exploration of the extent to which different outcomes arise from distinctive sets of cultural characteristics shared by definable groups of actors.

The cultures framework also differentiates the impact of interventions with the terms ‘proximal’ and ‘distal’. These are indicated in Fig. 7.1, where the triangles indicate a change in the feature. Proximal effects refer to changes to the cultural ensemble (motivators, materiality, activities) and/or the extent of the actors’ agency. In some instances, interventions that enhance agency may be all that is required to achieve a change in cultural elements and thereby the sustainability outcomes. Distal effects refer to changes in relevant measures of sustainability (e.g. health, equity, economy, environment). By achieving proximal changes, an intervention should achieve distal changes in the sustainability measure/s of interest—if it does not, then it is a failure of policy design. Importantly, changes to the proximal and thereby the distal characteristics must both have positive implications for sustainability measures—there is no point, for example, in interventions that reduce energy consumption (distal effect) while worsening the health and wellbeing of actors because they have turned down their heating (proximal effect). For this reason, policy evaluations should assess both proximal and distal impacts of an intervention.

Although policy work with the framework will generally be seeking to identify cultural ensembles that have a relatively direct relationship with the sustainability outcomes of interest (e.g. energy consumption), there will be other less direct cultural influences on these outcomes (e.g. relating to transport patterns, food expectations or carryovers between work and home). So when we are looking to assess the sustainability implications of particular cultural ensembles, we need to be aware of other cultural features in actors’ lives that may work against the intent of policy (for example, parents who are motivated to drive their children to school because of the perceived safety benefits).

When we look at culture from a sustainability perspective, there is no expectation that there will be an idealised ‘sustainable culture’ towards which all actors will transition. There are many ways in which sustainability outcomes can be achieved, just as there are many different ensembles that deliver unsustainable outcomes. Sometimes cultural ensembles that rank well on one sustainability measure (e.g. low-carbon emissions because of limited energy use) will rank poorly on another (e.g. health and equity measures). Consciousness about sustainability does not necessarily equate to positive measures of sustainability. An environmentally aware wealthy household that adopts symbols of sustainability yet flies overseas for their holidays is likely to have a far higher carbon footprint than a

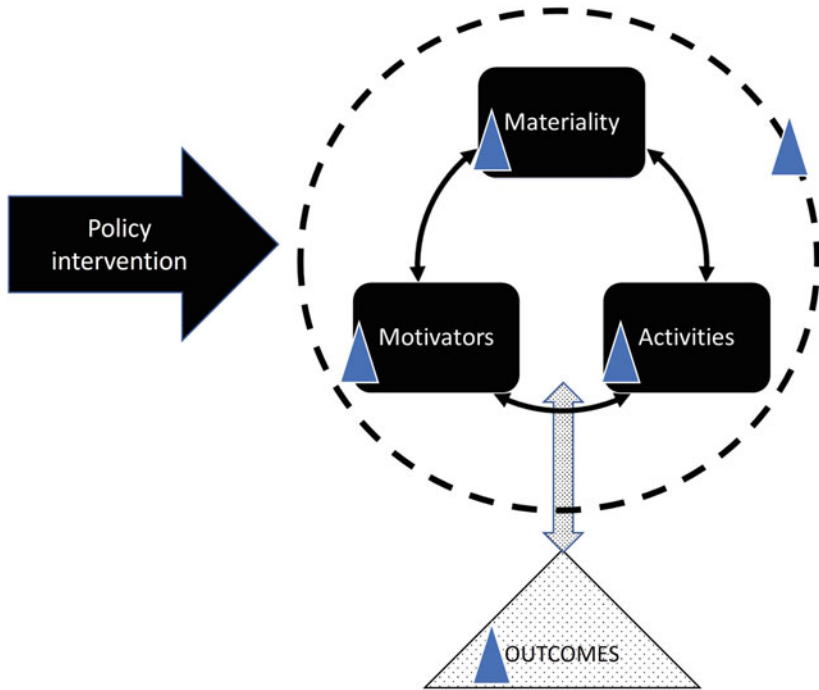


Fig. 7.1 Designing policy with the cultures framework. Any intervention will affect an actor's cultural ensemble and/or their agency (proximal impacts), and this will have consequential implications for measures of sustainability outcomes (distal impacts)

low-income household that cannot afford luxury items or air travel. Analysis through the cultures framework invites a non-judgemental approach to culture—the focus on outcomes means accepting that these could be achieved through any number of diverse cultural arrangements.

Policy as a Change in External Influences

The framework positions policy interventions as changes to external influences on a culture group. As discussed in Chapter 4, external influences may include aspects of the national context and environment, existing policies and laws, institutions, infrastructures and widely shared beliefs

and ideologies. As part of policy design, the framework invites consideration of how some of these influences may already be supportive of cultural change towards more sustainable outcomes, while others may be barriers or constraints to change (Fig. 7.2). For cultures that already have sustainable outcomes, it may be important to identify external influences that may be eroding their ability to maintain their cultural ensembles or are constraining their agency. Identifying and differentiating external influences in relation to specific cultural clusters makes it easier to identify where interventions may be required.

The first policy consideration should be to identify external influences that are already supporting the relevant sustainability outcomes: these should be retained unless more effective ones are planned. The second policy consideration should be to identify any external influences that are active barriers to more sustainable cultural change or are eroding cultures that are already sustainable. This may involve dismantling or revising existing misaligned policies as opposed to developing new ones. Designing new interventions to support cultural change may be required as a third step, but only after these first two considerations

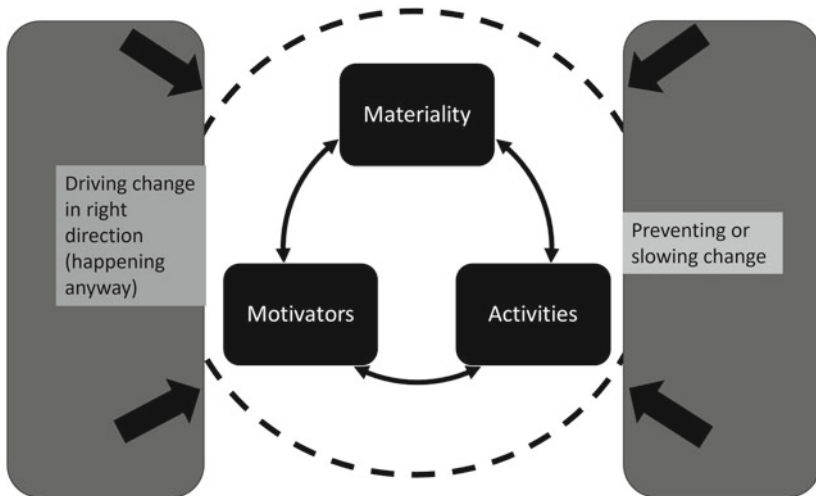


Fig. 7.2 Identifying external influences on a culture. Some influences may already be enabling cultural change in a more sustainable direction, while other influences may be simultaneously preventing or slowing cultural change

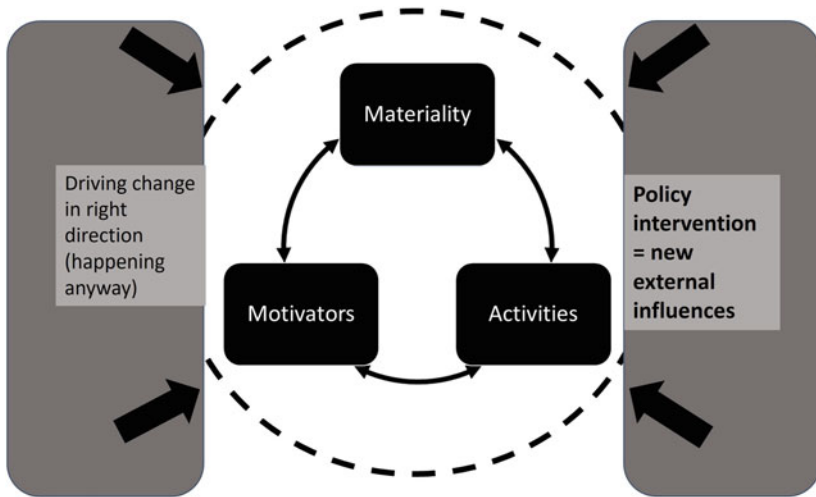


Fig. 7.3 Policy interventions as new external influences on culture

(Fig. 7.3). Together, these initiatives should be designed to have beneficial outcomes for the culture group itself (proximal benefits) as well as for wider sustainability outcomes (distal benefits) (Fig. 7.1).

Changing Cultural Ensembles

Policy does not always need to actively seek to change culture. If there are clear trends whereby groups are already working to become more sustainable, the best policy action may be to remove any barriers and let them get on with it. If groups aspire to become more sustainable but are held back due to agency constraints, then the best policy action may be to simply enhance their agency (e.g. through resourcing or skills development). Active interventions to change cultural ensembles should be a consideration only after these matters have been given careful consideration, which a prior cultural analysis will help with.

Looking at standard policy interventions through a cultures lens, we can see that they generally seek to alter either materiality (e.g. subsidies for electric vehicles), activities (e.g. requiring all businesses to report their greenhouse gas emissions) or motivators (e.g. social marketing campaigns). By showing how motivators, materiality and activities are

interconnected, the cultures framework draws policymakers' attention to how a change in any one of these elements can affect other elements. If these consequential implications are not considered, a policy may have unintended consequences. For example, a 2008 policy to only allow 'low-flow' (i.e. water-efficient) shower heads in the New Zealand market resulted in a major backlash from consumers who felt that their right to choose was being trampled on. The policy was at odds with people's expectations of a strong stream of hot water, and more than this, it was a failure of communication, as 'low-flow' showerheads do not in fact produce the trickle that the term suggests. A better understanding of household expectations, languages and understandings relating to showering would have avoided this public relations disaster. As it was, some have argued that this unpopular policy sealed the fate of the government at the election that occurred shortly after, with the opposition using it as a prime example of the 'Nanny State'.

Where policy is at its most effective, it touches on all elements of culture. A good example in New Zealand (although not formally explored through the cultures framework) was a health-related policy programme to reduce the harm of smoking cigarettes, both to smokers and to passive breathers of their smoke. The comprehensive programme introduced policies that changed smoking practices by outlawing smoking from public venues, schools, public transport and businesses open to the public, and other policies that altered material aspects of smoking culture such as outlawing advertising and requiring health warnings and graphic images on cigarette packets. The changes to smoking practices and materiality had consequential impacts on norms, beliefs and values among the general public. This multi-pronged approach has not only markedly reduced the number of smokers in New Zealand but has also led to a massive shift in public norms around smoking, such that today most people would be horrified to see a person smoking in a bar or restaurant.

Working with Cultural Vectors

Policy also needs to pay attention to how culture is learned and shared—the role of cultural vectors. As discussed in Chapter 4, culture is learned through both semantic knowledge and bodily knowledge. Semantic knowledge (know-that) is mainly learned through observational, spoken and written sources, and consists of general understandings of the world. People consciously use these ideas to judge things proper or improper.

Semantic knowledge may be used when people are considering different courses of action, and it is accessed relatively slowly and deliberately to support reasoning, evaluation, judgement and categorisation. Bodily knowledge (know-how), in contrast, is learned through the repetition of bodily actions, repetitive use of perceptual and motor skills, and recurring cognitive and emotional messages. Bodily knowledge is internalised without explicit mediation through thought processes. It is held in the body-mind as a network of associations and accessed via fast pathways that are non-reflective and independent of intention (Lizardo, 2017).

This has clear implications for policy design. Bodily knowledge is usually deployed as a rapid response to a situation and requires little effort, whereas applying semantic knowledge requires a high degree of attention and motivation. People apply bodily knowledge to situations similar to the one in which the relevant associations were formed, while semantic knowledge is able to be applied in a reasoned way to novel situations. Semantic knowledge does not necessarily align with bodily knowledge, and even if semantic knowledge changes, the more automatic bodily responses will remain. This is another reason why ‘information deficit’ theories of behaviour change often fall short.

Importantly, these different forms of cultural knowledge are not necessarily associated in cognitive processes. One form can be retrieved and used without activating the other, and they are weakly coupled at best. The capacity to make semantic statements does not imply that people have the bodily knowledge to actually enact this perspective, as we saw earlier in the chapter with the example of efficient driving. To be fully effective, policy should be designed in the light of both pathways by which cultural knowledge is learned and retrieved.

Policy and Multi-level Cultures

Culture operates at multiple levels. As discussed in previous chapters, powerful and broadly influential cultures can act as an ‘external influence’ on cultures that have less agency. When considering policy interventions, it is therefore important to think not only about the culture group that that is most directly linked to the outcome that one seeks to change, but also about more powerful cultures that are shaping or constraining them. For example, to get more citizens using active transport, rather than just seeking to change individual behaviours it might be equally or more important to look at changing the culture of authorities responsible

for infrastructure, policy and funding, as their own cultural ensembles will shape their decisions.

A multi-level policy focus was proposed in a paper on achieving sustainable transport in New Zealand (Stephenson et al., 2018). As well as introducing first-level interventions that directly affect transport users, it recommends second-level interventions which involve changes to the processes of decision-making. These drive long-term investments and affect multiple areas of transport such as funding sources, funding allocations and urban form. More deeply, the paper argues for third-level interventions to achieve an all-of-government normative shift so that sustainability principles underpin all transport law and policy, and are also adopted by non-transport agencies (e.g. energy, housing, urban form) whose decisions have implications for future mobility. Once multi-level cultures are aligned, decisions and actions support each other at every level and transformative change is within reach.

Policy Cultures

Policymakers themselves are also embedded in their own culture, and it can be as invisible to them as it is to any other group of actors. Sustainability transitions require a deep rethink of many cultural assumptions, not the least those that are buried in policy culture such as the priority given to technological solutions, the belief that policy should be technology neutral and the dominance of economic theories in policy thinking. Given the urgency and magnitude of the sustainability crisis and the relative ineffectiveness of many policies, it would be helpful for you as a policymaker to investigate the role of your own culture—the implications of your and your colleagues' own biases and practices, and your tendency to replicate past policy approaches even when they don't achieve the desired outcomes. It may be helpful to apply the cultures framework to your policy agency: to identify, for example, shared ways of thinking, dominant forms of knowledge, the use of jargon phrases and traditionally accepted practices. You might also identify the many external influences on your policy culture and explore your capacity to alter it. Ultimately, you should become aware of the extent to which your policy culture itself is a barrier to sustainability transitions.

A STEP-BY-STEP GUIDE

Having established some high-level ideas about using the cultures framework for policy design, I now use a hypothetical example and take the reader through a step-by-step process of analysis. I focus on the problem of cooling: how to keep households cool as the climate heats up.

1. Clarify Your Intended Outcomes

As a first step, identify the outcomes you are interested in for policy purposes—the triangle at the bottom of Fig. 4.8. For the purposes of our example, the policy problem is that, all else being equal, homes will generally become hotter indoors due to climate change. Households that cannot adjust to this may suffer decreased health and wellbeing, and these consequences are likely to be spread inequitably across the population. Households that have sufficient agency may be in a position to keep their homes cool, thus avoiding health and wellbeing impacts. However, a widespread uptake of air conditioning could lead to a massive increase in peak demand on electricity systems over summer.

Distal outcomes of households' response to a hotter climate might therefore include increased electricity consumption, higher peaks in electricity demand in summer, more travel to cooler climates, or more hospitalisations or deaths from overheating. Proximal outcomes (changes to cultural features) might include householders acquiring more cooling devices, making physical alterations to their homes, changing cooking routines to cooler periods and learning new cooling skills.

From a sustainability perspective, poor outcomes that policymakers may wish to pre-empt range from the implications for individuals (e.g. health impacts) and households (e.g. financial and equity implications) to the impacts on local energy systems (e.g. insufficient supply available from the electricity grid on hot days) and implications for exacerbating climate change (e.g. from increased emissions from the additional electricity generation). An intervention to target just one of these problems won't necessarily solve the others and could well exacerbate them. An integrated policy approach would seek to achieve positive gains on all of these measures as a result of policy interventions.

2. Explore the Current Culture

Having established the outcomes we are interested in, we now seek to understand the existing cooling cultures across the population. Households will already have their own ensembles of material items, activities and motivators that relate to keeping cool on hot days. Relevant materiality might include the way their home is constructed (its insulative properties, windows, etc.), any cooling devices (fans, air conditioners) and the clothing that people wear. Relevant practices may include when and how they use their cooling devices, draw shades against sun intrusion, open windows, drink fluids or take a rest during hot periods. Relevant motivators could include the cooling traditions that come from their upbringing, the knowledge that they have about how to keep cool and their norms regarding a comfortable temperature—for example, 25 degrees may seem cool for some and hot for others.

Households will likely use diverse ways of keeping cool, so to develop policy we first need empirical evidence of these cooling cultures, and whether (and how) they are already changing. One way of eliciting this is through national household surveys. In our research in New Zealand, for example, national surveys enabled us to use cluster analysis to identify four main groups of households with relatively distinctive cultural features in relation to energy efficiency. This could be followed up by in-depth interviews with cluster members to provide more detail.

Even this step might give cause for policy learning. Looking at the different cooling cultures, are there things that policy can learn from households about techniques to keep cool? Are there cooling techniques that households can learn from each other?

If well designed, step 2 should enable policymakers to better understand the heterogeneity of cooling cultures across a population, the different ways in which households are already responding to hotter weather and the variability in outcomes (e.g. how negative outcomes might be unequally spread across a population).

3. Understand the Barriers to Change

Some households will find it easy to adjust their cooling culture. Maybe they can escape the city in summer or can afford more costly energy bills from the use of air conditioning, or can easily take advantage of policies set up to improve insulation and install cooling devices. These households

have more agency, and external influences are less constraining on their change. Negative outcomes from these energy culture changes may be more distanced from these households, such as spikes in demand on the electricity grid and increased carbon emissions.

For other households, the capacity to adjust may be highly constrained. This may be because their motivators, activities and materiality relating to cooling are tightly interconnected and thus hard to change. Perhaps they don't have a good understanding of cooling techniques, or maybe other aspects of their everyday life constrain any changes (e.g. gendered roles, cooking routines). External influences beyond their control may constrain their ability to act. For example, if the air outside is polluted or they feel insecure, they might not wish to open windows to create an air flow. It may be that they lack agency—perhaps the capital and running costs of air conditioners is too high, or they can't take advantage of cooling subsidies because they don't own their home. These households may well have aspirations to change but lack the capacity to do so.

Understanding variability in agency is a critical step. Any policy intervention should be designed with an understanding of actors' capacity to alter their cultural ensembles. This includes any constraints on households being able to take advantage of the policy itself, such as language or access barriers. Engaging with householders is the best way to understand constraints on their agency.

4. Consider Multi-level Cultures

An important step in policy development is to identify the various actors or groups of stakeholders that play a role in the outcomes of interest. So far I have only discussed households, but there may well be other actors who influence householder cooling cultures.

As discussed earlier, culture can work on multiple levels to constrain or enable change. For example, living in rental accommodation can strongly constrain households' ability to act. Landlords control much of the material lives of their tenants, and a landlord's motivators, activities and materiality relating to the rental unit will influence their tenants. Research that contrasted landlord and tenant heating cultures in New Zealand revealed that tenants did the best they could but could only make small material changes, and so they had to adjust their expectations of warmth and their heating practices to what was possible within the constraints

created by the landlord's heating culture (Nicholas, 2021). These kinds of dynamics are likely to play out in cooling just as much as in heating.

Influential organisations such as councils and government agencies will also constrain or shape the ways households respond to a warmer climate. Their own beliefs, knowledge, languages, activities and material assets can be viewed as another culture that shapes the possibilities for household cooling cultures. Habituation can be as problematic within institutions as it is within households, and possibly more so if this leads to inequitable policy interventions. From a policy perspective, it is important to consider at what level of culture any interventions need to occur.

5. Identify External Influences

This step invites policymakers to identify broader influences that are shaping or constraining change in the cooling cultures. It invites questions such as: What external influences are preventing or slowing cultural change in relation to the outcomes sought? Are some external influences already driving change to this culture?

Mapping external influences (which are likely to vary according to different cooling cultures) helps to target interventions. This may involve actively retaining influences that are already driving positive change and seeking to adjust influences that are limiting household agency and/or are barriers to cultural change. This exercise may involve a regulatory, institutional and policy review, including looking at policies that appear unrelated but still influence the relevant cultures and agency. Engaging with households is also important in order to understand how they are differently affected by external influences.

6. Select the Focus of Your Policy

By now, policymakers should have a good understanding of the heterogeneity in cooling cultures, current cultural changes, unmet aspirations and agency, as well as identification of multi-level cultures and other external influences.

The question now is where (and whether) to intervene. This depends of course on the outcome sought. If the policy intent is to limit increases in electricity demand, then the focus may be households that can afford to acquire and use air conditioning. If the policy focus is on health and well-being, then the focus should be on households that have limited agency

to adjust to a hotter climate. A one-size-fits-all policy is unlikely to be effective across all cooling cultures.

Alongside this, it is important not to get caught up in a deficit model of policy development. Are there cooling cultures that should be celebrated and exemplified because they already have positive sustainability outcomes? What can policymakers and others learn from these great examples?

7. Establish Which Aspects of Culture to Influence

Having identified cooling cultures that may need support to achieve policy aspirations, what aspects of that culture and/or members' agency can policy help with? If focusing on householders, don't immediately assume that material changes have to be the place to start. Consider encouraging changes in practices that cost little but make an appreciable difference. Or changes in people's expectations about indoor temperatures. Or maybe help with new understandings and bodily techniques for staying cool. Policy here should be co-developed with householders' own observations and aspirations, and seek to enhance their agency.

Problems may also be identified with more powerful cultural actors. For example, it could be that a key agency is slow to bring in new standards that will assist in keeping homes or urban areas cool, due to misaligned motivators or inordinately slow processes. Changing these may ultimately have a far bigger impact on house temperatures than seeking to change household cultures.

8. Decide on Your Interventions

It is now time to look creatively at the options to support positive change in the selected cooling cultures. The aim of the design process is to achieve proximal change to relevant cultural ensembles and thus achieve distal change to the desired sustainability measures. This means staying aware of two moving targets at the same time—considering the broader implications of proximal change (e.g. will the intervention impact actors' health and wellbeing in unintended ways?) as well as for the distal goals (e.g. will it also reduce greenhouse gas emissions?). Interventions to achieve one outcome (e.g. reduce peak demand from air conditioning) could have negative consequences for other outcomes (e.g. health and wellbeing, equity) so multi-focused policy design may be needed.

It should be noted that culture change isn't always a desirable outcome. As already noted, some cultures may already be strongly aligned with the outcomes sought, in which case policies may seek to ensure that those cultural characteristics are supported and reinforced. It is also important to retain and enhance any external influences that are already supporting effective cooling cultures. In other instances, effective household cooling cultures may be latent, in which case the first place to look for interventions is to remove any barriers to positive changes to which householders already aspire, but are held back by their limited agency and/or external influences.

Beyond this, targeted interventions may be required to support the kinds of changes identified in step 7. These fall more in the arena of 'normal' policy design, but even here, awareness of the dynamics of cultural change is critical. A change in one aspect of culture may lead to consequential changes for other aspects of culture, which could have unintended consequences. Some trials that seek to understand these consequential changes would be advisable.

Don't forget also that it may be more important to target cultural change at other levels—within institutions or among landlords for example—rather than assuming that households are the 'problem'. Good policy design for sustainable outcomes needs to recognise and address cultural change at all levels (even within the policy agency itself) in order that all cultural shifts are aligned with the outcomes, rather than working against each other.

9. Evaluate

Good policy design includes post-intervention evaluation of its effectiveness. Evaluation is a critical part of any policy cycle and involves having measures of the situation prior to any interventions, and follow-up measures of the same indicators after the policy has been in place for some time. Evaluation is particularly important from a cultural perspective because the same intervention may have different outcomes depending on the households and their existing cultural ensembles and agency. Even if it has not been used to design interventions, the cultures framework can be used to underpin policy evaluations.

Traditionally, evaluation has tended to focus on 'outcome measures'—for example, has water consumption decreased, is electricity consumption more efficient, are there fewer hospital admissions, are there more fish in

the stream? In the language of the cultures framework, these are distal measures. In contrast, the framework invites evaluation of the impact of an intervention on the relevant cultural ensemble (proximal impacts), *as well as* on any measurable shift towards the goal of the intervention (distal impacts) (see Fig. 7.1). For a cooling-related policy intervention with households, for example, measurement of proximal outcomes might include whether and how households have changed their cooling practices, skills, norms and understandings, and/or any physical changes to their home or appliances, and/or changes to their agency. Measurement of distal outcomes might include any change in energy consumption arising from these cultural shifts, or changes to measures of health and wellbeing.

A dual focus on proximal and distal outcomes can help reveal why interventions may not be as successful as hoped. For example, the study in Ireland on energy efficiency interventions in social housing (discussed in Chapter 5) showed that the targeted increases in thermal comfort weren't achieved in some households due to the persistence of old routines, while other households turned up the heating and thus made no savings, thus foiling two of the policy goals of the intervention (Rau et al., 2020). Policy can also fail because it has a poor fit with the culture it is attempting to influence: in Chapter 5, I described the US Navy's attempts to introduce energy-efficient lighting which was foiled by naval norms, materiality and practices that resisted change (Dew et al., 2017). On the other hand, policy can be far more influential than anticipated, as with the uptake of solar lighting in Vanuatu described in Chapter 6, with consequential changes to energy culture and other aspects of daily life that had not been anticipated (Walton et al., 2014). Evaluating both proximal and distal changes can help reveal how and why interventions are successful or not, and whether unintended consequences have resulted, and thereby can help with adjusting interventions to achieve better outcomes.

Some examples of how the cultures framework has been used to evaluate the effect of interventions have already been introduced. These include a comparison of two different kinds of interventions to improve household energy efficiency in New Zealand (Scott et al., 2016), an investigation into the failure of top-down interventions to change cooking methods in Zambia (Jürisoo et al., 2019) and an assessment of the effect on household energy culture of interventions to reduce or shift electricity consumption in Canada (Lazowski et al., 2018).

To date, most evaluations of proximal outcomes have used pre- and post-intervention surveys. However, there have been attempts to standardise measures of cultural change. In the energy field, two consecutive papers developed and tested an evaluation toolkit for household energy interventions that was based on the elements of the cultures framework. The authors' focus was on behaviour-based energy interventions that aimed to reduce energy consumption. This work developed an empirically verified set of measures to evaluate energy culture before and after an intervention. The measurement instruments (questions developed based on behavioural theories) were tested to ensure they were reliably interpreted, measured the constructs they were intended to and predicted behavioural intentions (Ford et al., 2016; Karlin et al., 2015). The toolkit was developed for implementation in California and the survey questions were designed for this context, so its use elsewhere would require some adjustments of the evaluation instruments.

Evaluation of proximal as well as distal outcomes of interventions can thus provide deeper learning as to how interventions affect the features and dynamics of culture, as well as any sustainability outcomes of these changes. This can support programme improvement and enable comparison between different types of interventions.

INTERVENTIONS FOR CHANGE BY BUSINESSES, ORGANISATIONS AND COMMUNITIES

It is not only in the policy world that people need to make decisions about how to stimulate change. Many people in businesses, organisations and communities are also motivated to become more sustainable. The cultures framework has been used in several studies of businesses to help them to understand their energy culture, and from there to help them to determine how to tailor interventions to achieve a more sustainable culture.

Interventions for Sustainable Energy Use in Small-Medium Enterprises

A good example is a study on business energy cultures that was part of a European Union Horizons 2020 research project. The project assessed business energy culture and potential interventions for more sustainable outcomes. It was designed to be used by energy managers and others to evaluate the state of energy culture and engage employees

in more sustainable energy-related practices. A survey, based on the elements of the cultures framework, was initially tested with expert participants in Finland, Italy, Switzerland, Germany, France and Austria, and subsequently applied in 65 small-medium businesses with more than 20 employees, located in the six partner countries.

The survey contained 13 questions for energy managers and 12 for employees. Survey questions for staff within the business were designed around five topics aligned with the cultures framework: awareness of energy technologies within the firm; personal beliefs, aspirations and motivations relating to sustainability; current energy practices in the company; external factors that shape energy culture at work, including national regulatory frameworks; and participants' perceptions of barriers to change. The survey sought to capture the many complex elements involved in the nature of energy use within a firm, and was designed to help energy managers understand the relative 'maturity' of the company's energy culture and identify where change was needed. It was also seen as a way of enabling all employees to understand the firm's energy culture and their role in it, so that they could be active participants in change. Based on the firms' scores in the 'maturity matrix' relating to their respective energy cultures, they were provided with tailored advice based on expert recommendations developed by the six partner countries (Fatima et al., 2021; Oksman et al., 2021).

Designing a Community Energy Management Programme

The framework can also help to identify opportunities for action or intervention in community-based initiatives. This example is from research with households in an eco-conscious mixed-use urban village in Austin, Texas, which had high levels of solar PV and electric vehicles. One of the problems with the uptake of distributed renewable generation is that it can have repercussions for the electricity grid, one of which is the 'duck curve' that occurs when solar generation ends at sunset and households all start using more power from the grid at the same time, resulting in a steep upward curve that looks a bit like a duck's neck. This study looked at how the duck curve could be flattened if community members worked together to adjust the timing of their energy use for collective benefits. The project's starting point was that any energy management programme, including energy feedback tools, should be designed around the community's social and physical context—its energy culture. The researchers

used the cultures framework to reveal motivations for participating in a collaborative energy programme.

Their study found households had widely shared social norms that aligned with collective action to design and implement a local energy management programme, even though their material culture and practices were quite varied. This suggested to the researchers that the programme should emphasise societal goals and environmental impacts, and these were incorporated into a co-design process that involved researchers, designers and potential users. Understanding the energy culture helped with this process by prioritising particular criteria that could sustain and strengthen community engagement. Overall, the model they developed to represent the influence of culture was able to predict about 46% of the variance in favourable attitudes towards the proposed programme (Krietemeyer et al., 2021).

I am also aware of other non-policy contexts in which the cultures framework has been used by community-based organisations in New Zealand and internationally. Some have used it to assist their community or organisation to develop an awareness of their own cultural ensembles, while others have used it to design three-dimensional programmes of action that seek to influence motivators, materiality and activities for more sustainable outcomes. As far as I am aware, none of these have been formally written up, but it is pleasing to hear that this approach is useful. The cultures framework can be easily understood by both technical and non-technical audiences, which is vital for encouraging participation and motivation. I am excited by the potential for the cultures framework to be more widely used in lay contexts.

CONCLUSION

This chapter has mostly focused on the use of the cultures framework to underpin policy analysis, the design of interventions and evaluation. From the outset, the framework has shown itself to be particularly useful in this respect: supporting the development of comprehensive policy advice in the energy cultures programmes, and of policy recommendations arising from many of the research articles discussed in this book. These experiences have emboldened me to suggest that it could be more widely used as a policy framework.

When seeking to design interventions for better sustainability outcomes, one certainty is that culture matters. Culture offers a deeper

understanding of how and why humans or organisations act as they do, and has much to offer for the design and evaluation of policy interventions. Cultural analysis can assist in the identification of patterns of cultural ensembles across a population. It can reveal how cultural attributes can shape different responses to interventions and result in unintended outcomes, and why some policies may have regressive impacts on some culture groups. It can help reveal constraints in actors' agency and draw attention to the multiple influences at play that shape their cultural ensembles and their ability to respond to a policy intervention. It complements policy approaches that see society as comprised of individuals, identifying broader influences on behaviour than economic maximisation and broadly shared psychological traits. In a world where 'information deficit', 'rational actors' and 'nudge theory' dominate policy conversations, culture offers more nuanced understandings and reveals new opportunities for policy action.

The cultures framework offers conceptual contributions to policy development by bringing notions of cultural ensembles, agency, external influences and multi-level cultures into the policy arena, and proposing the evaluation of both proximal and distal outcomes. I have outlined a generic process of policy development that could be tailored to different circumstances. However, I need to emphasise that it is a relatively novel approach and to date, as far as I am aware, has only been used by the research community. It would be good to see this approach applied and evaluated by policy agencies in the future.

REFERENCES

- Barton, B., Blackwell, S., Carrington, G., Ford, R., Lawson, R., Stephenson, J., Thorsnes, P., & Williams, J. (2013). *Energy cultures: Implication for policymakers*. Centre for Sustainability, University of Otago.
- Berry, F. S., & Berry, W. D. (2018). Innovation and diffusion models in policy research. In C. M. Weible & P. A. Sabatier (Eds.), *Theories of the policy process* (4th ed., pp. 253–297). Routledge.
- Borrás, S., & Edler, J. (2020). The roles of the state in the governance of socio-technical systems' transformation. *Research Policy*, 49(5), 103971.
- Carrus, G., Tiberio, L., Panno, A., Lettmayer, G., Kaltenegger, I., Demir, M. H., Biresselioglu, M. E., Solak, B., Dimitrova, E., Tasheva-Petrova, M., & Mutafchiiska, I. (2019). *Analysis of enabling factors for consumer action*. ECHOES Research report, NTNU, Norway.

- Cherp, A., Vinichenko, V., Jewell, J., Brutschin, E., & Sovacool, B. (2018). Integrating techno-economic, socio-technical and political perspectives on national energy transitions: A meta-theoretical framework. *Energy Research and Social Science*, 37, 175–190.
- Cortés, A., & Amigo, C. (2022). Energy culture and the dynamics of energy poverty in south Chile: A blind spot for decontamination energy efficiency policies. *People, Place and Policy*, 16(1), 73–97.
- Debnath, R., Bardhan, R., Darby, S., Mohaddes, K., Sunikka-Blank, M., Coelho, A. C. V., & Isa, A. (2021). Words against injustices: A deep narrative analysis of energy cultures in poverty of Abuja, Mumbai and Rio de Janeiro. *Energy Research & Social Science*, 72, 101892.
- Dew, N., Aten, K., & Ferrer, G. (2017). How many admirals does it take to change a light bulb? Organizational innovation, energy efficiency, and the United States Navy's battle over LED lighting. *Energy Research & Social Science*, 27, 57–67.
- Fatima, Z., Oksman, V., & Lahdelma, R. (2021). Enabling Small Medium Enterprises (SMEs) to become leaders in energy efficiency using a continuous maturity matrix. *Sustainability*, 13(18), 10108.
- Ford, R., Karlin, B., & Frantz, C. (2016). Evaluating energy culture: Identifying and validating measures for behaviour-based energy interventions. In *Proceedings of the International Energy Policies & Programmes Evaluation Conference* (pp. 1–12).
- Ford, R., Walton, S., Stephenson, J., Rees, D., Scott, M., King, G., Williams, J., & Wooliscroft, B. (2017). Emerging energy transitions: PV uptake beyond subsidies. *Technological Forecasting and Social Change*, 117, 138–150.
- Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy*, 31(8–9), 1257–1274.
- Geels, F. W. (2005). Processes and patterns in transitions and system innovations: Refining the co-evolutionary multi-level perspective. *Technological Forecasting and Social Change*, 72(6 SPEC. ISS.), 681–696.
- Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions*, 1(1), 24–40.
- Geels, F. W. (2012). A socio-technical analysis of low-carbon transitions: Introducing the multi-level perspective into transport studies. *Journal of Transport Geography*, 24, 471–482.
- Geels, F. W., Pieters, T., & Snelders, S. (2007). Cultural enthusiasm, resistance and the societal embedding of new technologies: Psychotropic drugs in the 20th century. *Technology Analysis and Strategic Management*, 19(2), 145–165.
- Geels, F. W., Sovacool, B. K., Schwanen, T., & Sorrell, S. (2017). The Socio-Technical Dynamics of Low-Carbon Transitions. *Joule*, 1, 463–479.

- Geels, F. W., & Verhees, B. (2011). Cultural legitimacy and framing struggles in innovation journeys: A cultural-performative perspective and a case study of Dutch nuclear energy (1945–1986). *Technological Forecasting & Social Change*, 78(6), 910–930.
- Jürisoo, M., Serenje, N., Mwila, F., Lambe, F., & Osborne, M. (2019). Old habits die hard: Using the energy cultures framework to understand drivers of household-level energy transitions in urban Zambia. *Energy Research and Social Science*, 53, 59–67.
- Karlin, B., Ford, R., & McPherson Frantz, C. (2015). Exploring deep savings: A toolkit for assessing behavior-based energy interventions. In *Proceedings of the International Energy Program Evaluation Conference* (pp. 1–12).
- Khan, I. (2021). Factors dominating peak electricity demand in Bangladeshi urban households: An assessment through the *energy cultures framework*. *Energy Sources, Part B: Economics, Planning, and Policy*, 16(3), 279–299.
- Krietemeyer, B., Dedrick, J., Sabaghian, E., & Rakha, T. (2021). Managing the duck curve: Energy culture and participation in local energy management programs in the United States. *Energy Research & Social Science*, 79, 102055.
- Lazowski, B., Parker, P., & Rowlands, I. H. (2018). Towards a smart and sustainable residential energy culture: Assessing participant feedback from a long-term smart grid pilot project. *Energy, Sustainability and Society*, 8(1), 1–21.
- Lizardo, O. (2017). Improving cultural analysis: Considering personal culture in its declarative and nondeclarative modes. *American Sociological Review*, 82(1), 88–115.
- Manouseli, D., Anderson, B., & Nagarajan, M. (2018). Domestic water demand during droughts in temperate climates: Synthesising evidence for an integrated framework. *Water Resources Management*, 32(2), 433–447.
- McKague, F., Lawson, R., Scott, M., & Wooliscroft, B. (2019). Understanding energy poverty through the energy cultures framework. In Simcock, N. Thomson, H. Petrova, S. Bouzarovski, S. (Eds), *Energy Poverty and Vulnerability: a Global Perspective* (pp. 33–45). Routledge.
- Nicholas, L. (2021). *On Common Ground: How landlords & tenants shape thermal performance of private rental properties* [Masters Thesis], University of Otago.
- Oksman, V., Reda, F., Karjalainen, S., & Fatima, Z. (2021). Towards sustainable energy culture in the industrial sector: Introducing an interdisciplinary method for understanding energy culture in business industries. *Energy, Sustainability and Society*, 11(1), 1–13.
- Rau, H., Moran, P., Manton, R., & Goggins, J. (2020). Changing energy cultures? Household energy use before and after a building energy efficiency retrofit. *Sustainable Cities and Society*, 54, 101983.

- Reisch, L. A. (2017). Behavioural economics, consumer behaviour and consumer policy: State of the art. *Behavioural Public Policy*, 1(2), 190–206.
- Russell-Bennett, R., McAndrew, R., Gordon, R., & Letheren, K. (2019). Effectiveness of Household Energy Efficiency Interventions in Advanced Economies: What works and what doesn't. Report for Energy Consumers Australia. *Group of Energy Efficiency Researchers, Australia*.
- Sahakian, M., & Wilhite, H. (2014). Making practice theory practicable: Towards more sustainable forms of consumption. *Journal of Consumer Culture*, 14(1), 25–44.
- Sandfort, J. R., & Moulton, S. (2020). Replication or innovation? Structuration in policy implementation. *Perspectives on Public Management and Governance*, 3(2), 141–154.
- Scott, M. G., & Lawson, R. (2018). The road code: Encouraging more efficient driving practices in New Zealand. *Energy Efficiency*, 11(7), 1617–1626.
- Scott, M. G., McCarthy, A., Ford, R., Stephenson, J., & Gorrie, S. (2016). Evaluating the impact of energy interventions: home audits vs. community events. *Energy Efficiency*, 9(6), 1221–1240.
- Shove, E. (2014). Putting practice into policy: Reconfiguring questions of consumption and climate change. *Contemporary Social Science*, 9(4), 415–429.
- Sovacool, B. K., & Griffiths, S. (2020). The cultural barriers to a low-carbon future: A review of six mobility and energy transitions across 28 countries. *Renewable and Sustainable Energy Reviews*, 119, 109569.
- Stephenson, J., Barton, B., Carrington, G., Hopkins, D., Lavelle, M. J., Lawson, R., Rees, D., Scott, M., Thorsnes, P., Walton, S., & Wooliscroft, B. (2016). *Energy cultures policy briefs*. Centre for Sustainability, University of Otago.
- Stephenson, J., Spector, S., Hopkins, D., & McCarthy, A. (2018). Deep interventions for a sustainable transport future. *Transportation Research Part D: Transport and Environment*, 61, 356–372.
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
- Walton, S., Doering, A., Gabriel, C.-A., & Ford, R. (2014). *Energy transitions: Lighting in vanuatu*. Project report, Australian Aid.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

