



## Perspective

# Pluralising agency to understand behaviour change in sustainability transitions

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## ABSTRACT

In order to maintain a habitable planet, relatively fast and large-scale transitions towards sustainable societies are needed especially regarding the production and consumption of energy. The transitions require people to change the ways they conduct their daily lives as well as agency (capacity to act) in bringing about the needed changes at different levels of society. However, inadequate attention to human behaviour and agency is a recurring critique of the sustainability transition literature. In this article, we bring together insights from institutional, socio-psychological, practice theoretical and relational perspectives to highlight the diversity of understanding agency in sustainability transitions. The different approaches provide a nuanced view on the roles of people and the conduct of everyday lives in sustainability transitions. Building on the multi-level perspective (MLP), we argue that in order to acquire a more holistic understanding on the role of agency in sustainability transitions, attention should be paid to the links and interactions between different socio-technical systems, such as energy, transportation, waste and food as well as their internal dynamics, blurring the boundaries of micro-, meso- and macro-levels. Improved understanding of agency will bring to the fore everyday behaviour as an enabler of sustainability transitions. Furthermore, it will allow a more nuanced perception of the transition dynamics, which can significantly improve the overall understanding of the situated sustainability transitions mechanisms.

## 1. Introduction

Studies on sustainability transitions have increased our understanding of the required socio-technical changes and how innovations and organisational actors may lead or resist the transition [1]. Meanwhile, large-scale sustainability transitions require people to change the ways they conduct their daily lives. Transition to more sustainable energy systems requires changes not only in production technologies but also in our heating and cooling practices with wider implications to our daily routines and behaviours [2,3]. Fossil-free transportation systems, likewise, require rearranging mobility and logistics in our daily lives [4]. As sustainability transitions increasingly affect our lives, transition becomes less about technical innovations and diffusion of novel technologies and more about people adopting new practices and ways of life [5]. Thus, sustainability transitions also require the capacity and capability to act as individuals and collectively to bring about the needed changes. The systemic perspective on socio-technical transitions easily risks downplaying this more nuanced understanding of agency [6].

Inadequate attention to human behaviour and agency is a constant

critique of the socio-technical system transition thinking [7–11]. While the agency of social groups and even individuals has been identified as critical in contributing to regime change and governing the transitions, there are only rather few attempts to conceptualise individual or communal agency and everyday behaviours in low-carbon transitions [12–14]. Furthermore, the questions of agency often focus on power relations and struggles between actors [1,15,16]. While this is an important part of agency, there is a need for more attention to be directed at questions such as how and through what mechanisms do actors contribute to sustainability transitions in their everyday lives? What is the role of behaviour change in sustainability transitions and how can such behaviour change be enabled? Evidently, this also includes questions about how and whose behaviours need to change and who defines the needed change.

In this article, we consider agency from different theoretical lenses in order to widen the understanding of behaviour change in sustainability transitions. Behaviour change is commonly approached from the perspective of individual agency, with an emphasis on rational choice or norms and values [17–19]. Studies on sustainability transitions

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emphasise how transitions require changes in multiple levels in relation to both structure and behaviour [20]. We widen this discussion to institutional agency, embedded practices and relational agency. We evaluate how these perspectives can assist the widely used multi-level perspective on socio-technical transitions [12,21] to give more prominent attention to agency and behaviour change in transitions. We show how the focus on people and their agency in everyday life improves understanding of the interlinkages between different regimes and systems as well as how agency is also important at the contextual macro-level of socio-technical systems. Furthermore, the relational understanding of agency enables a more nuanced and dynamic perception of sustainability transitions [22,23].

## 2. Agency and behaviour change in sustainability transition research

Socio-technical transition studies explain the change towards sustainability from a systemic perspective, which connects structure and agency and sees them as mutually constitutive [20]. In the multi-level perspective (MLP), transition is understood to occur as an interplay between three levels: niche innovations, prevailing socio-technical regime and exogenous landscape developments. Transition occurs when the prevailing regime changes and this can take place via different pathways which all require agency [21,24].

As a heuristic framework, the MLP offers tools for examining transitions with the possibility to expand and refine the framework with additional theoretical approaches. MLP applies a multidimensional model of agency, which combines ideas from science and technology studies (STS), neoinstitutional theories and evolutionary economics [12,21]. Together, these approaches enable agency to be understood in multiple ways, with the possibility to highlight rationality, interpretation, structures or power struggles. Transition occurs via successive rounds of structures influencing actors and actors changing structures, also known as structuration [25], where sociocultural and interpretive processes are important in the struggles over the direction of transitions [12,20,21].

In MLP, regime is understood as the rules of the game, largely also guiding behaviour and agency. Despite the diversity in conceptualising agency, this understanding of regime has directed the analysis towards the institutional roles people have as regime incumbents, niche actors or intermediaries [7,8,21,24,26]. Hence, instead of individual actors or everyday behaviours, the focus in MLP is predominantly on organisational actors or socially coordinated actions of individuals in promoting transitions [12]. A simplified model of socio-technical transition presents regime actors (usually incumbent organisations) as struggling to maintain the regime against a challenge presented by niche actors (entrepreneurs with new innovations), who wish to change the regime with intermediaries acting as change agents. People have relatively static roles as representatives of certain interests, which downplays the complexity related to human behaviour and the different roles people engage in their daily lives [7].

This simple model is partially related to the focus on single socio-technical systems, such as the energy system, and an emphasis on niche-regime interactions [27]. Studies focused more on agency and everyday behaviour help to account for the interaction between multiple regimes, niches and systems as well as to understand the largely black-boxed landscape level [9,28]. Recent studies on regime destabilisation and reconfiguration as well as multiple and whole system analyses have partially addressed these problems. These studies have recognised that the same actors can both challenge and maintain some aspects of the regime and that the regime actors can drive transitions [24,29–31]. Widening these insights with the various understandings of agency in institutional, socio-psychological, practice theories and more relational, performative approaches provides useful avenues for developing MLP thinking to better account for behaviour change.

## 3. Linkages between multiple regimes and systems

Recent advances of addressing agency in relation to the MLP draw from theories of sociological institutionalism [12] that elucidate the ways in which institutions affect the context-specific underlying preferences or identities of actors. The approach of institutional logics enables examining change as actors confront different roles and aspiration in their daily lives and duties [32–34]. At the core of the institutional logics is an understanding of multiple simultaneous institutional norms, values, beliefs and material practices among which actors need to navigate. In MLP, a socio-technical regime is often understood as a fairly stable set of institutional logics, whilst other systems and regimes may rely on partially different logics [33]. As the same actors can have different positions in different systems and regimes, such navigation may enable a transition to occur [35,36]. Such a perspective enables the understanding of intra-regime contradictions and creates a more dynamic understanding of agency within the regime [37]. A detailed focus on diverse actors with different positions is needed to analyse how they navigate the different logics as individuals and collectives strategically, but also in small and less purposeful action in everyday life.

Furthermore, the mechanisms of institutional change can be studied in more detail by enriching the institutional logics approach with a focus on individuals and their abilities to do specific kind of institutional work in facilitating transitions. Actors' ability to perform institutional work can be limited with significant differences between actors [35]. Identity theories, Bourdieu's concept of habitus [10,38,42] as well as research on adoption and acceptance of innovations [39–41] can bring insights to understanding these differences especially if they are tied to developing the structuration thinking inherent in MLP [6,21,33]. From these perspectives, the key differences relate to social-psychological features of agents, such as habitus, identity or beliefs and understanding, as internal structures of agents. Since these are influenced by personal experiences as well as collective phenomena, they emerge not just within a socio-technical system, or a particular role in transition, but rather from the wider range of systems the actors are involved in [6,38]. A better understanding of the internal structuration processes related to social-psychological mechanisms can also provide better means to induce and mainstream behaviour change [38].

A focus on practices provides another way to observe agency emerging from the linkages between different sociotechnical systems and contribute to developing structuration thinking in the MLP. Instead of looking into contradictions in institutional rules or actors' capacities, attention is turned to the composition and performance of social practices and how different practices related to different socio-technical systems are connected [13,43,44]. Energy consumption is related to many issues beyond the energy system, including housing and living arrangements, work and free-time activities and habits of convenience. Changes in one of them can also change energy consumption [2,3,45]. At the core of the connections are the different elements that constitute practices. These include materials, technologies, infrastructures, skills, competences and know-how as well as norms and rules and shared meanings [44]. Each social practice contains a recognisable combination of these elements, but the same elements can be shared between different practices. A change in a shared element can change multiple practices. Thus, the shared elements allow for the observation of linkages between different socio-technical systems [43]. As carriers of practices, people mediate these connections in their everyday life as they bring practices to life and the change of practices about by performing the practices. A permanent change in practices is something that happens as the different elements and surrounding practices reorganise as a result of distributed agency or multiple agencies. This perspective places actors firmly in their contexts, but also makes everyday behaviour visible and important for transitions.

Going further into the direction of distributed understanding of agency, other relational approaches, such as actor network theory, have also significantly contributed to understanding how material relations

**Table 1**

Approaches that can widen the understanding of agency and behaviour change in sustainability transitions.

	Institutional	Socio-psychological	Practice and relational theories
Agency Key concepts	Bounded rationality Institutional logics, institutional work, institutional entrepreneurship	(ir)rationality, routine and group behaviour Social identity, habitus, beliefs, lifestyle, value, social representation, trust	Distributed, relational, performative Social practice, elements of practices, performance, situatedness
Contribution to sustainability transitions	Agency emerging from mismatches between institutions and institutional logics. Contrasting roles and conflicts in daily action.  Change agency spanning between different levels.	Agency emerging from social and psychological mechanisms. Interplay between institutions, communities and individuals. Mainstreaming innovations and behaviour change into everyday behaviours. Understanding changes in values and norms.	Openness regarding agents and agency. Non-humans, material generating agency.  Distributed and collective agency across the levels. Flat ontology, going beyond level-based agency, following actors and performances.

play a part in the attempts to encourage change towards sustainability [46–48]. This enables a detailed examination of how humans and technologies interact and change each other creating room for agency, which has implications across socio-technical systems. Instead of a focus on human actors as the connectors of regime and system interactions, the core focus is on performance and interaction. Performance brings together different materials, humans, narratives and other entities, and it enables agency to emerge from their complex relations. Emphasis is put on the different ways of relating taking place in different situations with openness regarding the goals, levels and mechanisms of transition [31,49–51]. The institutional context of transition is not seen as a static regime, but rather under constant negotiation between diverse overlapping and intersecting institutional constellations [52]. Thus, the relational approach enables fluidity in regimes and systems through the emergence of relational agency.

#### 4. Agency in the context of landscape

Landscape level phenomena function also as connectors between different socio-technical systems. Landscape developments relate to economic cycles, wars, pandemics or natural hazards which can appear as shocks or disruption to regimes. However, landscapes can also change more subtly during long periods of time. While actors have less capacity to influence the landscape than regimes or niches, the landscape level also requires agency [21]. Agents translate landscape changes to regime and niche levels and can also affect the landscape [10,53].

Ideal-typical rationalities present in institutional logics, relating to for instance family, professions and religion, can be conceptualised at the landscape level. Agents navigating the different institutional logics may eventually be able to shift the ideal-typical rationalities. The emergence of environmental and sustainability logics represents a good example on these shifts [53,54]. The values and norms of actors can change and become values and norms on the landscape level through discursive work, which functions to dissociate regime level rules and practices from the moral foundations of actors [53]. These moral entrepreneurs need not only to be heroic actors actively working to change norms, actors' behaviour in everyday life may also accelerate sustainability transition at the landscape level [5,55–57].

This implies that socio-psychological theories on values, such as value-belief-norm theory [19] or basic values [18], can also provide important input in explaining the mechanisms related to actors' ability to change the landscape and translate these changes to regime and niche levels. Bögel and Upham [10] argue that values are a relatively permanent phenomenon that can be located at the landscape level. Strengthening of altruistic, biospheric or post-materialist values in societies [58,59], for instance, is a landscape change which could broadly facilitate sustainability transitions in many socio-technical systems if it actualised in everyday behaviours. More explicit connections with these theories and the MLP are needed to understand the agential mechanisms of how these kinds of landscape changes come about.

As the relational and practice approaches enable examining the

linkages between different regimes and sociotechnical systems, they also challenge the level-based thinking in MLP [60,61]. From practice theoretical perspective, values and norms are embedded in practices as meanings [44]. Following this, Laakso et al. [28] remind that, instead of exogenous landscape level pressure, changes in cultural and social norms occur through the reconfiguration of practices. There are no levels beyond practices as social structures or institutions are also constituted of practices. The more established practices, or bundles of practices can, however, function as contexts for other practices [60]. Similarly, other relational approaches are based on flat ontology not separating between micro, macro and meso-levels [52,62,63]. Thus, values, visions or regulatory frameworks, considered as an exogenous landscape in MLP, can also change, even rapidly, due to the same agencies that create change at other levels.

#### 5. Conclusions

The MLP, and transition theories more widely, struggle in combining institutional stability and path dependency with agency emerging situationally and enacted also in the daily lives of citizens [62,64]. While the MLP combines several approaches and has provided an analytically useful heuristic to understand socio-technical transition processes, it can benefit from further diversification and focus related to agency. Similarly, agency-focused approaches need support from systemic perspectives in understanding social change [51,61] (Table 1).

The approaches possess different value in relation to understanding transitions, but their different ontological and epistemological understandings imply also mismatches and conflicts [30,51,61,65]. The clearest conflict is the seeming incompatibility between the level approach central in MLP and flat ontology of relational and practice perspectives [20,61]. Hence, a single coherent framework for agency in transitions seems unfeasible. Instead, the more nuanced understanding offered by accepting plurality in approaches can reveal connections between individual, structural (and even relational) processes [6,11]. Sustainability transitions research should more boldly engage with the different perspectives on agency and develop ways to connect this knowledge to understanding processes of change. Openness to different approaches to agency can reveal useful starting points for going beyond the solutions offered by single (social) scientific disciplines and enable openness to the ways in which sustainability transitions are understood in society as well [23,64].

Developing wider perspectives on agency can guide the analysis on transitions as occurring not just due to discrepancies between niches, regimes and landscapes, but also due to tensions within regimes as well as between diverse actor roles and identities in daily life or agencies emerging from relations in fluid processes. This requires more detailed analyses and, paradoxically, a wider scope. We need studies that focus on particular actors and their multiple roles. Spreading over diverse systems which the actors operate in, these studies could reveal how transition agency is formed at the level of individuals, shaped by institutions and social practices and enable a more systematic inclusion of

varying values, identities, motivations and purposes of actors. These studies would need to focus on all kinds of actors, not just those central in promoting transitions, such as frontrunners and niche-innovators, but essentially those that need to change their everyday behaviour for the transition to succeed in the longer term. Furthermore, as new innovations and technologies shape humans and their behaviour with implications stretching in wide networks of human and non-human relations, transition agency does not need to be limited to just humans. A focus on how agency emerges from relations can help to overcome pre-established empirical categorisations regarding the relevant actors and enable unknown agencies to be observed. Finally, the strengths and weaknesses of different approaches should be recognized, multiple, appropriate approaches should be utilised in different case studies and more attention should be paid to the links and interactions between the approaches.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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