Fecha de recepción: diciembre 2019
Fecha de aceptación: febrero 2020
Versión final: marzo 2020

Transition Design: The Importance of Everyday Life and Lifestyles as a Leverage Point for Sustainability Transitions

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Abstract: The core challenge of the current era is the transition towards sustainability. This transition needs to be defined in the broadest terms possible. It is a project that is at once political, social, economic, cultural, scientific and technological: every dimension of human affairs is challenged by the need for transition, and, as various issues reach critical points (climate change, inequity, resource depletion, biodiversity loss, etc) the urgency with which this needs to happen increases. The School of Design at Carnegie Mellon University have responded to this challenge by introducing what they have called 'transition design' into the curricula at the undergraduate, graduate and doctoral levels (Irwin 2015) which "*takes as its central premise the need for societal transitions to more sustainable futures and argues that design has a key role to play in these transitions*" (Irwin *et al.* 2015b: 1).

Keywords: Transition Design - Everyday Life - Lifestyles - Leverage Points - Socio-technical transitions - Sustainability Transitions.

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ward less materials-intense ways of living, such as could be afforded by sharing economies. cameron.tonkinwise@uts.edu.au

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Introduction: integrating three different approaches to transition

The core challenge of the current era is the transition towards sustainability. This transition needs to be defined in the broadest terms possible. It is a project that is at once political, social, economic, cultural, scientific and technological: every dimension of human affairs is challenged by the need for transition, and, as various issues reach critical points (climate change, inequity, resource depletion, biodiversity loss, etc) the urgency with which this needs to happen increases.

The School of Design at Carnegie Mellon University have responded to this challenge by introducing what they have called 'transition design' into the curricula at the undergraduate, graduate and doctoral levels (Irwin, 2015) which "*takes as its central premise the need for societal transitions to more sustainable futures and argues that design has a key role to play in these transitions*" (Irwin *et al.,* 2015b: 1). In many ways transition design is a logical development of trends that have taken place within design over the last few decades (Irwin *et al.,* 2015a). Teaching and research has been organized around a framework that is comprised of four mutually influencing areas: 1) vision 2) theories of change 3) mindset and posture and 4) new ways of designing. Associated with each of these areas is a growing body of transdisciplinary literature, teaching materials and student exercises (See Figure 1).

In this paper we focus on and attempt to integrate three distinct strands of thought relating to sustainability transitions that have been prominent in the 'theories of change' area of the transition design framework. Two of these, social practice and socio-technical transitions theories are well established and have a large body of research behind them, and some work is already underway to integrate them (Hargreaves *et al.,* 2012; Cohen and Ilieva, 2015; Seyfang, 2010). The third, the Domains of Everyday Life framework, has been developed more recently (Kossoff, 2011a, 2011b).

Whilst each of these discourses have an important contribution to make to the transition process, they each leave significant questions unanswered. These include the question of how to create a symbiotic relationship between the macro and micro levels of society and

between top-down and bottom-up efforts at transition; how to contextualize knowledge related to transition and to integrate the many sectors that need transitioning; how to conceptualise everyday life, which we argue is transition's basic context; and how to understand the process of need satisfaction as motivation for social practices, and to make this process more sustainable. We hope that integrating these three areas will make them more useful as tools for transition solutions than they are when taken in isolation.

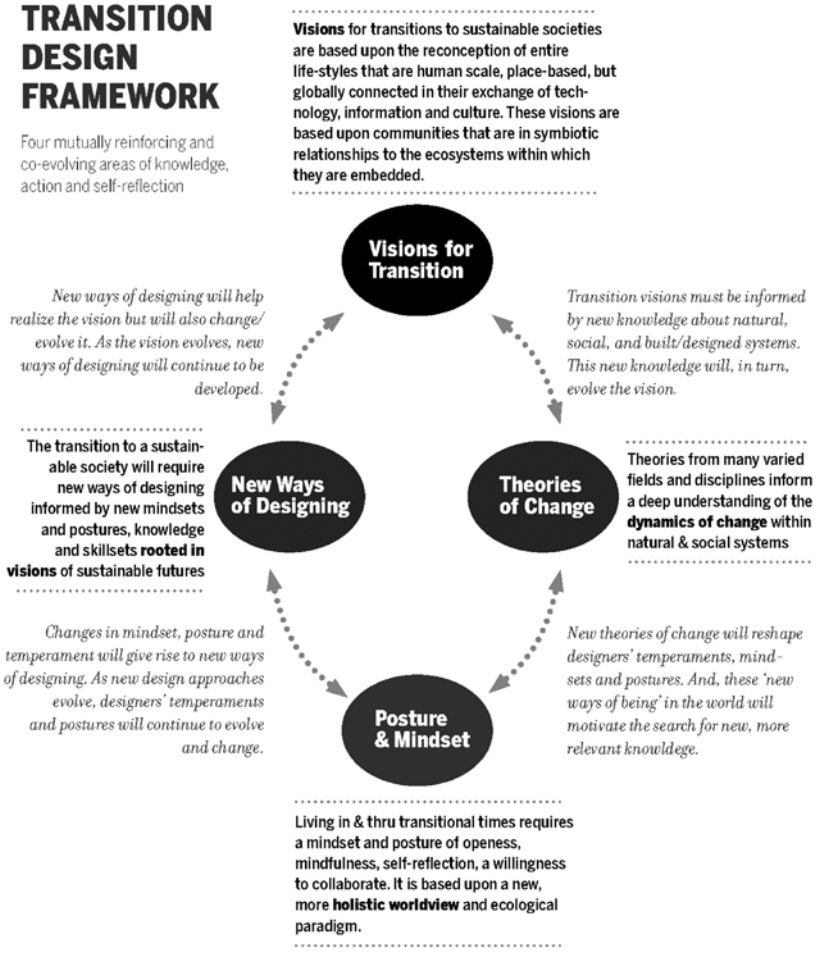

Figure 1. (Irwin, Kossoff and Tonkinwise, 2015).

Summary of Socio-technical transitions theory and the Multi-Level Perspective

Socio-technical transitions theory is one of the most theoretically sophisticated, and useful, approaches to understanding the process of societal transition, and to how "*we may influence transitions into a desired direction*" i.e. "*the normative orientation of sustainable development*" (Rotmans and Loorbach, 2010:105). It is fashioned out of multiple disciplines and discourses, but we focus here on three broad areas on which it draws: complex systems theory, theories of governance and history.

Socio-technical transition theory and complex adaptive systems

Socio-technical transition theory views social systems through the lens of complexity theory, focusing on the "*non-linear-dynamics of social phenomena*" (Grin *et al.,* 2010: 7). Various principles which derive from the study of dynamic, complex adaptive systems are incorporated into socio-technical transition theory. These include: non-linearity — cause and effect of any given phenomenon are connected to one another through multiple feedback loops, greatly limiting the possibilities for predicting the consequences of any disturbance or intervention; co-evolution — systemic change/ transition is generated and reinforced through the interaction of two or more subsystems (Grin *et al.,* 2010: 7); nested scaling — systems are organised at different levels of scale, the higher the level "*the more aggregated the components and the relationship and the slower the dynamics*" (Grin *et al.,* 2010:4) emergence — new structures and behaviours arise out of, but are not reducible to, the self- organising dynamics of the parts of systems (Rotmans and Loorbach, 2010: 118-9) and sensitivity to initial conditions — small interventions can have disproportionately and unpredictably large consequences[1].

Socio-technical transitions theory and history

Socio-technical transitions theory studies the history of socio-technical change in order to advise on how best to transition toward more sustainable ways of living. It attempts to offer a more accurate *description* of society, in order to develop more viable *prescriptions* for how society can change. It is argued that historians, unlike many policy makers (and even social scientists), have expertise that enables them to understand societal change contextually, and in terms of coevolution, non-reductionist multi-causalism and multiple spatial and temporal scales. It is possible to learn from historical case studies of entire cycles of transition and to derive from these narratives that illuminate the "*patternsand mecha nisms*" that underlie transition (Geels and Schot, 2010: 98-99). Socio-technical transition theory studies this history of socio-technical change in order to advise on how best to transition toward more sustainable ways of living.

Socio-technical transitions theory and governance

Socio-technical transition theory advocates 'governance' as a political alternative to 'government', according to which "*the process of steering society and the market can no longer be located exclusively in political-administrative institutions….governance implies the attribution of a much more prominent role to the interactions between state, market and society*" (Grin, 2010: 223). It is further stated that "*the underlying assumption is that full control and management of these problems is not possible, as in classical management*" (Rotmans and Loorbach, 2010: 140). On other hand, in contrast with the neoliberal faith that the unfettered market can resolve all social and environmental ills, and in contrast with some bottom up efforts at transition, governance retains an important role for managerialism, policy making and directive interventions into complex social dynamics.
From the governance perspective, transitions are understood as networked "*multi-actor, multi-domain and multilevel processes*" (Rotmans and Loorbach, 2010: 150). Thus governance is, theoretically, flexible and diffuse enough to interact with various levels and forms of social organization, and with a plurality of interests and worldviews. Because of this, governance has greater potential than government for experimentation and reflexive learning processes, and it is better equipped to manage and direct transition within the context of a "*wider set of ongoing long-term structural transformations…* [the] *turmoil of profound change*" (Grin, 2010: 315). In short, governance is more consistent with (and more reflective of) a worldview informed by complexity theory and more appropriate for a society in which networks assume an ever more important role. Indeed, in as far as governance is concerned with 'transition management' it can be described as the process of "*maneuvering towards a favourable attractor*" (Rotmans and Loorbach, 2010: 126) that occurs through finding and acting on favourable leverage points.

Key socio-technical transition theory concepts

Building on this theoretical background three "*transition concepts…are used to describe and explain transition mechanisms, patterns and pathways*" (Rotmans and Loorbach, 2010: 126):

1. *the multiphase concept* — which aims to "*recognise different phases and offers desired targets and levers to influence the direction*" of a system, and to identify tipping points, beyond which irreversible change has occurred;
2. *the multi-pattern concept*, which identifies the pathways that arise out of "*generic patterns…a particular combination and sequence of mechanisms*" such as "*emergence, clustering, empowering, transformation, decay and building up*" (Rotmans and Loorbach, 2010 135);
3. *the multi- level concept*. This is probably the most highly developed and important transition concept, and it pulls together much of the afore mentioned socio-technical transition theory into a tool for transition, which we discuss here in some detail. Particularly valuable is its promotion of a non-mechanistic theory of change, advocating instead a process of situated governance that steers socio-technical co- evolution.

The multi-level perspective has its roots the concept of 'nested hierarchy' (Geels and Schot, 2010: 19) one of the central concepts not only of complexity theory, but also of earlier iterations of systems theory, dating back at least half a century (Capra and Luisi, 2014). The novelist and scientist Arthur Koestler provided one of the clearest and earliest articulations of this concept in his description of 'holarchies' in which semi-autonomous and integrated systems, 'holons', are nested within other such systems (Koestler, 1975). The latter are themselves nested within even greater systems. The higher the level of scale at which a system exists, the more encompassing it is, that is, the more subsystems are nested within it. There are, therefore, fewer systems (holons) in any given holarchy at higher levels of scale than there are at lower levels of scale (See Figure 2).

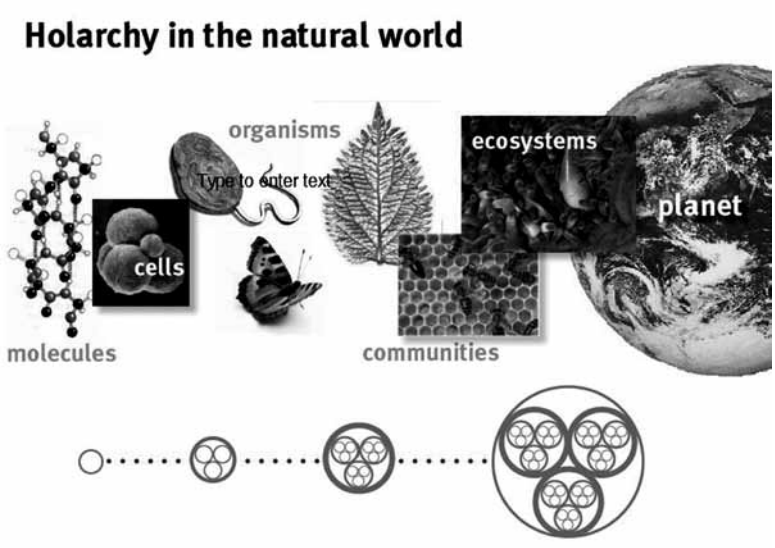

Figure 2. Natural forms are arranged in nested 'holarchies of whole/parts, or 'holons'. Each such holon is at once a whole in its own right, but a part of a greater whole and is therefore semi- autonomous or interdependent with other holons, as well as self-organising and emergent (Diagram by Terry Irwin, 2011).

It is important to emphasise that the use of the word 'hierarchy' does not denote control, direction or management of the lower levels by the higher levels. In holarchies (nested hierarchies) there is no 'higher' or 'lower', there are just greater and lesser systems each of which operates at a different level of scale: whilst each such system is open to the flux of matter, information and energy, each, at whatever level of scale it occurs, is organisation-

ally autonomous, or self-organizing. Each system is at once an integrated whole in its own right, but a part of a greater system.
This organisational arrangement can be found in all natural systems, from the study of which systems/ complexity theory originates (Capra and Luisi, 2014): cells are nested within organs, organs within organisms, organisms within ecosystems, and so on. Arguably this arrangement, or something like it, can also often be found in social systems. The concept of holarchy and holons has now found its way, in various forms, into a range of contemporary discourses that are informing management theory, philosophy and the social sciences (Wilber, 2011; Robertson, 2015) This includes socio-technical transition theory, in the form of the multi-level perspective (MLP).
MLP, adopting the nested hierarchy approach (Geels and Schot, 2010: 19) identifies three levels of scale (micro, meso and macro) at which different kinds of interaction occur (between, for example, social, technical, institutional, infrastructural and normative elements) within which transition can be conceptualised. Within a socio-technical context these levels of scale are i) niches ii) regimes and iii) landscapes: "*Each level is conceptualised as a heterogenous socio-technical configuration….the (socio-) logic of the three levels is that they provide different kinds of coordination and structuration activities*" (Geels and Schot, 2010: 19).
The three levels represent networks of relationships between multiple factors that are progressively more resistant to change and more prone to stasis: as their level of scale increases, they become more 'locked-in' to their current trajectory, and the likelihood of an intervention taking root is correspondingly lessened:

> *In niches the social networks are small, unstable and precarious, consisting of entrepreneurs and innovators that are willing to take a chance…regimes are more stable: social networks are larger; artefacts, regulations, markets, infrastructures etc, have coalesced into stable configurations and rules are articulated clearly and have more structuring effects…..The socio- technical landscape forms a broad exogenous environment that as such is beyond the direct influence of regime and niche actors* (Geels and Schot, 2010 18-19).

Even though niche, regime and landscape operate at different levels of scale, they are not spatial concepts, and their 'level of scale' does not correspond to any geographical terrain. Thus "*the macro* [landscape] *level is not necessarily bound to the global level, but does include universal trends that often function at the global level*". Such trends included globalization, urbanization, and many environmental problems, and the ideologies, cultures, technologies and institutions which contribute to these. Similarly, the micro (niche) level is not bound to the domestic or local, but these may provide the most fruitful opportunities for intervention. And again, the meso (regime) level is not necessarily bound to national or municipal government or to large organizations, corporations and institutions, but these are likely to be the arenas within which widespread diffusion of niche innovations can be can enabled or stymied. In short, niche, regime and landscape are analytical abstractions that describe the dynamic state of a fragment of a socio-technical system, and therefore its potential for transition at any particular moment.

The key strategy of MLP is to encourage and protect '*niche incubation*', to generate novelty in the form, for example, of new techniques, initiatives and culture within their fluid and relatively unstructured environment. Such initiatives can become more broadly diffused by creating 'alignments' in particular between the levels of the niche and regime (but also, sometimes, between the landscape and the other two levels). 'Alignments' can occur, for example, by linking niche innovation to regime policies, rules, routines, infrastructures and markets, influencing their otherwise "predictable trajectories" (Geels and Schot, 2010: 21). On the other hand, if such regime elements do not change (the regime may oppose the niche generated innovations, or they may be not supported by policies and infrastructure) innovations will remain niche bound for long periods of time, and may fail altogether. In short "*transitions come about when these processes link up and reinforce each other*" (Geels and Schot, 2010: 27) and if they do not, then transition will not take place.
The MLP transition theory offers a valuable scalar account of society: niche experiment, regularized practices (regime), and slow-moving infrastructures (landscapes). In terms of complexity theory, the transition process is understood as non-linear (there are not clearly defined causal relationships between the various networks and systems); the incubated niche can be seen as a leverage point that represents the system's sensitivity to initial conditions; the alignment of niche and regime represent the coevolution of different systems levels; phase transition can be made more likely through multiple, strategic and designed interventions.
However, the relations between different levels of scale –the micro, meso and macro– are not well articulated. As we argue below, the MLP usage of hierarchical/holarchic nesting is not comparable to that which exists in living systems. This is problematic not only for advising on how to govern change (for example, by aligning niches with regimes) but to also help understand how such change can enhance the quality of everyday life. We propose below that in integrating the MLP with the framework of the Domains of Everyday Life, this problem can be mitigated.

Summary of social practice theory

Both social practice theory and socio-technical transition theory ask how societies change, and therefore how they might become more sustainable. Socio-technical transition theory focuses on niche incubation within broad 'sectors' (water and energy supply, agriculture, building etc), with the aim of making these more efficient and less resource intensive. It attends to the 'big picture' from a policy making (transition management) perspective, and tends to be somewhat removed from the existential reality and the tangible details of daily life. Social practice theory, by contrast, attends to the multiplicity of 'little pictures', taking the 'practices' of people in their everyday lives "*as the unit or focus of attention*" (Shove and Walker, 2010: 471). It is through such practices, day after day –bathing, eating, driving, dressing, shopping and so forth– that people sustain themselves, but also contribute towards environmental degredation.

Contemporary social practice theory emerges out of a lineage of practice theories that has been articulated by various sociologists and philosophers over half a century, that includes Giddens (1984) Bourdieu (1990) and Shatzki (2010). In this paper we build in particular on the work done by Shove, Pantzar and Watson (Shove *et al.* 2012)[2] and on some of the work influenced by them, because of its focus on the cycle of emergence, development, diffusion and decline of practices, and on the question of how social practices can become more sustainable. If socio-technical theory takes a telescopic view of the society it hopes to 'transition', contemporary social practice theory takes a microscopic view of the daily practices that entire populations engage in, in the hope of "steering" (Shove *et al.,* 2012: 115) these in more sustainable directions.

According to practice theory, social order and change emerge out of dynamic, recursive and mutually influencing relationships –in the form of 'practices'– between social structures and systems, on the one hand, and human action and agency, on the other. Practice theory, as described Shove *et al.*, represents an attempt to *"transcend the dualisms of structure and agency, determination and voluntarism [providing] a means of explaining processes of change without prioritizing human agency, and of conceptualizing stability without treating it as an outcome of given structures."* (Shove *et al.,* 2012: 4). Practice theories diverge from the individualist/liberal tradition which maintains that change comes about through free agency and personal choice. But they also depart from theories which argue that *"change is an outcome of external forces, technological innovation or social structure, somehow bearing down on the detail of daily life"* (Shove *et al.,* 2012: 4). Such theories, at least in Shove's assessment, include socio-technical transition theory (Shove and Walker 2010: 471).

A practice can be defined as constellation of diverse but interdependent and shared elements (knowledge, meanings, understandings, skills and artefacts, for example) of which individuals are '*carriers*'. These are organised into routinized and recurrent habitual or semi-habitual activities —"*successive performances*" (Shove *et al.,* 2012: 4) and directed towards achieving a goal or set of goals. Any kind of technical or product innovation, if it is to become a part of everyday life, requires a corresponding recurring change and reintegration of some or all of the 'elements' of practice that surround it.

In the analysis of Shove *et al.*, the elements of practice are organised into triad of *"materials - including things, technologies, tangible physical entities, and the stuff of which objects are made; competencies –which encompass skills, know-how and technique; and meanings– in which we include symbolic ideas and aspirations"* (Shove *et al.,* 2012: 14). A practice therefore has the potential to change when materials, competencies and/or meaning change, or when the ongoing '*reenactment*' of the integrative relationship between these is changed or lost. Practices are fluid in that their respective elements may move between and be incorporated into other, possibly related, practices, and they may simultaneously be part of multiple practices. Practices may also form *"bundles"* ("*loose knit patterns*" of practices) and complexes" ("*stickier and more integrated combinations*" (Shove *et al.,* 2012: 14) with emergent properties). Different practices can be, therefore to varying degrees connected or entangled and mutually influencing or antagonistic: change in one practice may be triggered or inhibited by this dynamic interdependence.

Critique of social practice theory and MLP

The problem of levels of scale

Both socio-technical transitions theory and social practice theory apply insights derived from non-linear dynamics/complexity theory to their conception of how social form arises, and how it changes. In the case of socio-technical theory, as we have shown, use is made of concepts such as attractors, holarchies, co-evolution, self-organization and sensitivity to initial conditions. In social practice theory, the presence of non-linear dynamics/complexity is not quite as emphatic nor as thoroughgoing but it is nevertheless a significant factor: practices are dynamically related, form feedback loops and, en masse, have emergent properties, which gives them an irreducible character. Indeed, the rationale for making practices, rather than atomized individuals, the unit of analysis (and therefore transition), is that practices themselves represent emergent and irreducible entities. Because it is impossible to anticipate the effect of any given intervention on a complex system, both socio-technical and social practice theories advocates modest, reflexive and interative interventions.

Scale in social practice theory

This complexity influenced perspective represents an important and necessary shift, not only from atomistic "*cause and effects type*" (Shove *et al.,* 2012: 143) approach to transition, but also from the more broadly mechanistic and linear approach that often disastrously influenced twentieth century policy, to be top-down, grandiose, technocratic and dictatorial (Scott 1999). But whereas MLP transition theory uses scalar thinking to coordinate different levels of society, the concept of nestedness, which would be helpful to understand how practices of different scales relate to each other, is absent from social practice theory. In social practice theory, the entangled co-evolving or competitive practices of which everyday life is comprised are amorphously diffused and 'circulated' across space and over time. Shove *et al.* observe that the diffusion of practices *"play out at many scales, not least because practices themselves combine to form more extensive bundles and complexes*" (Shove *et al.,* 2012: 143). Yet the relative 'bundledness' or 'complexity' of practices is not in itself necessarily an indicator of the level of scale of everyday life at which a practice takes place: rather, 'bundledness' and 'complexity' are descriptions of the interconnection and interdependence of different practices. It is possible that practices at the micro-scale of everyday life, within households and neighbourhoods, can be 'complex' (whilst still belonging to regular, relatively unconscious routines) whilst practices at the macro-scale of everyday life, such as cities, can be 'bundled'[3]. Below we propose to use the Domains of Everyday Life framework to help clarify what these levels of scale of practices are; how practices unfold according to their level of scale; what distinguishes and what connects practices at each level of scale; and, above all, what are the possibilities for transitioning practices towards sustainability at each level of scale.

Scale in socio-technical transition theory (MLP)

The concept of holarchy (nested hierarchy) is at the centre of the multi-level perspective of socio- technical theory: niche is said to be nested within regime and regime within landscape, the move from niche to landscape represents an increase in the level of scale. But the MLP is an *"abstract analytical framework"* (Geels and Schot,, 2010: 19): whilst this is very helpful as a tool to help identify the possibilities for transition within different socio-technical systems, it is somewhat removed from actual human experience; its categories of niche, regime and landscape do not directly correspond the social structures, the lifestyles, and to the human experience it aspires to transition.

This problem could be addressed by construing niche, regime and landscape more 'holarchically'. As described in socio-technical transition theory, these three levels are not 'whole/parts' –nested, integrated, self-organising, semi-autonomous systems that are equivalent to cells or organs in an organism. The levels of the MLP, rather, are a convenient representation of structural couplings of elements of socio-technical systems, according to their complexity, stability and potential for change. These elements, whether they belong to niche, regime or landscape, can exist at any level of scale of human affairs/everyday life and can affect aspect of lifestyle. Just as 'bundles' and 'complexes' of practices can be found at both the micro level (*eg.* household, neighbourhood) and macro (*eg.* cities and large institutions) scales of everyday life, so too can landscape, regime and niche.

The MLP framework, therefore, even though it conceptualises socio-technical systems at different levels of scale, does not help clarify the level of scale of human experience/everyday life at which these need to be situated. A socio-technical food system, for example, will consist of micro-level elements (*eg.* domestic food preparation facilities); meso-level elements (*eg.* food markets) and macro- level elements (*eg.* farm-systems). Niches with potential for change may exist in any of these, as may aspects of regimes and landscapes.

Furthermore, within the MLP framework, socio-technical transition is construed in terms of more or less distinct socio-technical sectors, *"transport, energy, housing, agriculture and food, communication and health care"* (Geels and Schot, 2010: 11). Yet thinking in this way, in terms of specialised knowledge and isolated sectors, is a practice that has led to many social and ecological problems, and needs to be transcended if we are to transition towards a sustainable society[4]. Indeed, the effort to overcome this reductionist tendency has arguably been the raison d'etre of systems/complexity theory. (Capra and Luisi, 2014).

Sustainability transitions theorists Geels and Schot make a similar point in quoting the historian Tosh who argues that *"specialist expertise…. compartmentalizes human experience into boxes marked "economics," "social policy" and so on, each with its own lore, whereas what is really required is openness to the way in which human experience constantly break out of these categories"* (Geels and Schot, 2010: 13). To develop this thought, '*specialist expertise*' tends to lead to the compartmentalisation of socio-technical sectors which do not correspond to the "openness" of human experience.

Socio-technical systems –"*transport, energy, housing, agriculture and food, communication and health care*"– need, therefore, to be 'decompartmentalized'. Not only, as discussed above, do they need to be designed for the micro, meso and macro levels of scale of human experience/everyday life, they also need to be designed so that they are symbiotically

integrated at these levels of scale. In short, socio-technical systems need to be designed as nested 'whole systems'.

Everyday life, social practice theory and socio-technical transitions

Everyday life, the entangled and interconnected activities, mundane or otherwise, through which people sustain themselves and strive to satisfy their needs, is a fundamental level of human experience. It is therefore the basic context within which transition to a sustainable society needs to be conceptualised, designed and enacted: the sustainable modes of living toward we must transition should be ones in which everyday life is more integrated and valued, and in which the relationship between everyday life and larger systems has been clarified and ameliorated.

In the last half of the twentieth century a number of social theorists, including Henri Lefebvre, Guy Debord and Dorothy Smith (Gardiner, 2000) argued that everyday life in the modern era has been disastrously neglected or denigrated, both intellectually and in its role as the fundamental level of human experience. Practice theory can be understood in part as a contribution to this effort to remedy this neglect, and to revive the status of everyday life. In its recent iterations practice theory makes the case that policy needs to be directed at unsustainable practices that are embedded in everyday life (Shove and Walker, 2010; Sahakian and Wichita, 2013; Cohen and Ilieva, 2015; Strengers, 2010). And yet, as we discuss below, social practice theory does not fully engage with the discourse of everyday life critique: this has very important consequences, not least for way in which it influences criteria for sustainable practices. By contrast, the connection made with everyday life by socio-technical transitions theory, is cursory. Yet, clearly if it is everyday life that needs to be transitioned, socio- technical transitions theory needs in some way to be integrated into the everyday life discourse, or viceversa. Indeed, as we discuss below, this omission of everyday life is, albeit indirectly, recognised as an issue in the socio-technical transitions literature (Grin, Rotmans and Schot, 2010: 311).

The neglect and denigration of everyday life has been woven into the intellectual fabric of modernity. As sociologist Michael Gardiner argues, "*the desire to supersede everyday life with theoretical abstractions is…a peculiarity of the nineteenth and twentieth century*" (Gardiner, 2000: 48-51). Thus, for analytical purposes, various facets of everyday life are removed from their immediate circumstances, and then reconfigured as specialized, but decontextualized, areas of knowledge. This process of dissaggreation and abstraction of human experience has rendered everyday life invisible as a phenomenon in its own right. As Guy Debord argued,"*Modern society is viewed through specialized fragments that are virtually incommunicable; and so everyday life, where all questions are liable to be posed in a unitary manner, is naturally the domain of ignorance.*" (Debord, 2002: 239). This was necessary, he maintained, in order to obscure the dynamic interconnectedness of lived, human experience as whole, and to deny the extent of the alienation of this experience.

Moreover, the neglect and denigration of everyday life became an existential reality: everyday life was what was "*left over*" after "*activities that* [are considered] *distinct, superior,*

specialised, and structured" are subtracted (Lefebvre, 2008: 97). According to this account the "*uncatalogued residue of reality*" (Debord, 2002: 239) that is everyday life, comes to be colonised by what sociologist Dorothy Smith dubbed *"relations of ruling*" (Smith, 1987: 2-6) networks of centralising bureaucracies, technocracies and corporations. These progressively empty everyday life *"of functions originally embedded in localised relationship*" (Smith, 1987: 6) and come to direct and increasingly commodify and standardize social processes.

As this occurs, so called 'higher' and 'lower' human activities are dissociated, as are the private and public spheres, and domesticity and work; everyday life, as Lefebvre argued, fragments into systems and subsystems, and its different facets (work, leisure, politics etc) are compartmentalized into distinct space/time niches. Indeed, several everyday life critics have argued that everyday life as we know it is a modern phenomenon since the spatio-temporal 'compartmentalization' of everyday life that is one of the defining characteristics of industrial capitalism, has been absent or less pronounced in other societies (Gardiner, 2000). Thus everyday life tends to be organised into many kinds of fairly clearly demarcated, specialised zones, in which one activity takes priority over another –retail, leisure, industrial, education, government, agricultural, residential, and so forth.

By contrast, Gardiner summarises the character of everyday life in premodern societies, which

> *Formed a relatively coherent, organic totality, and different activities and knowledges were more fully integrated into everyday life.…in late medieval and Renaissance society, the boundaries between high and low culture, and between official and unofficial activity, were much more fluid and permeable, and daily life was not as rigidly compartmentalized as it is today…everyday life was not conceived of as separate from other, more specialized activities, but was a fully integrated relatively undifferentiated totality of human practices* (Gardiner, 2000: 10).

In short, according to this discourse, everyday life needs to once again become "decompartmentalized", or, to use Gardiner's phrase, *"consolidated into a unified whole,*" (Gardiner, 2000: 73) analogous to that which enabled everyday life in premodern societies to be more integrated, more coherent, and arguably more vital. For this to happen, everyday life needs to be 'decolonized', that is 'relations of ruling' need to be replaced by what might be called 'relations of self-organization', empowered patterns and practices through which people sustain themselves and satisfy their needs on an ongoing basis, and through which knowledge can be recontextualized and reintegrated into human experience.

Socio-technical transitions theory, governance, and everyday life

The anthropologist James C. Scott argues that the failings of the grandiose projects of twentieth centralised political-administrative institutions can be ascribed to the way which they substituted decontextualised knowledge, grounded in abstract rationalism, for knowledge embedded in local experience, inextricable from particular places (Scott,

1999). Put another way, centralised political- adminstrative institutions have been far removed from the everyday lives of the populations over whom they have jurisdiction. As Grin, Rotmans and Schot note, this a very salutary lesson for transition theory: if transtion practices are to gain agency, they must be more effectively and sensitively situated and contextualised than institutional interventions of the twentieth century were (Grin, Rotmans and Schot, 2010: 331).

Scott dubs contextualised, place-based knowledge, 'metis', *"a wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment…a practical responsiveness born of experience*" (Scott, 1999: 313-320). Although under assault in modern society, metis in some form or other remains necessary in many human and natural environments, since we often encounter situations of great complexity that have no exact precedent. Since these are non-repeating and unpredictable, the knowledge that is required to address such situations cannot be reduced to formulaic, rational procedures.

Socio-technical transitions theory has tried to address the worst excesses of such centralising hubris, and, as discussed above, draws on theories of 'governance' to do so. The networked governance advocated, engages with *"multi actors, across multiple domains, at multiple levels*" (Rotmans and Loorbach, 2010:150) of society that represent a plurality of interests, whilst emphasizing the importance of *'reflexive monitoring*' (Grin, 2010: 275-279*)* and iterative intervention. Nevertheless, as Grin, Rotmans and Schot themselves observe, this body of work is not well equipped to *"utilize contextualised knowledge*" (Grin, *et al.* 2010: 331), metis, knowledge embedded in everyday life and its associated lifestyles. This limitation contrasts with the many *"small community based (or grassroots) initiatives which can be remarkably innovative simultaneously across [multiple] social practices…they know what works in their localities and what matters to local people.*" (Grin *et al.,* 2010: 331). Indeed, whilst maintaining that it is important to retain capacity to 'mainstream' and 'scale up', Scott's critique of large-scale planning is cited: these failed

> *To acknowledge the importance of local knowledge which is needed to apply change in specific settings. Local knowledge is always contextual, cannot be easily enrolled and mobilized in large schemes since it resists standardization….a transition agenda should also be based on the local knowledge of consumers and local communities…the role of consumers and grassroots initiatives in transitions is underrated and under-conceptualised* (Grin *et al.,* 2010: 331).

The issue identified by Grin, Rotmans and Schot points to a perennial tension between top-down and bottom-up efforts at social, political and economic change. This tension has existed in different forms amongst progressives for the entire modern era (Marshall, 2010; White and Kossoff,2007) it is not surprising that it has resurfaced in our own, given the complexity, urgency and intractability of the issues that need to be addressed.

On the one hand, there are those who maintain that transition has to be grounded in 'community', or 'the local' and the small scale: change comes, incrementally, from the bottom up. This approach often reflects and aversion to hierarchical institutions, bureaucracies and centralised power, and a conviction that ends must be consistent with means

i.e. a decentralised, non-bureaucratic society can only be arrived at by decentralised and non-bureaucratic means (Buber, 1996). Others focus on governmental and other institutions which are not woven into the fabric of everyday life but control the levers of power, the offices of state and the boardrooms of corporations, and other centres of influence and decision making.

Both perspectives have merit: the danger of the bottom-up approach that focuses on micro-efforts is that it is easily marginalised and relegated to a countercultural fringe, without the capacity for generating society-wide transition, and certainly not in the short timeframe available. As Schot, Grin and Rotmans argue, contextual *"knowledge might be difficult to scale up, since the local character and the sense of being alternative in its solutions draws people in, and makes mainstreaming a suspicious goal"* (Grin *et al.,* 2010: 331). The danger of the top-down approach that is more attuned to macro- phenomena, as we have argued, is that it relies on decontextualised knowledge, that it cannot accommodate to metis, that it perpetuates the denigration of everyday life and that it is subject to bureaucratisation.

Whilst this uneasy relationship between the micro and macro levels of scale of human experience may not go away in the near future, it points to a need for more encompassing framework for transition, one that integrates both ends of the spectrum. It needs to help conceptualise the different levels of scale of human affairs and organization at which transition needs to be designed and implemented –from the domestic and the local, to the municipal, national and international– each level with its different modus operandi, different capacities, different issues and different potentialities. And it needs to help facilitate and help coordinate reciprocal and creative relationships between these levels.

Social practice theory and everyday life

The focus on everyday life is one of the great merits of social practice theory: as we have argued this is the most basic context within which transition needs to occur, and yet it is a relatively neglected and disparaged realm, certainly as far as policy makers have been concerned. From the perspective of social practice theory, everyday life is comprised of a dense weave of often mutually influencing and interdependent 'practices'. Everyday life's unsustainability can be ascribed not to wayward individuals who need to be 'nudged' by policy makers into becoming environmentally conscious citizens (to be made to feel guilty, essentially)[5] but to inertial practices that have to some extent have a life of their own. In relation to such inertial practices, individuals only have limited degrees of freedom or choice.

But, although concerned primarily with everyday life, social practice theory in general does not avail itself of the critical everyday life discourse, and yet may contemporary everyday life practices are a reflection and embodiment of the damage wrought by the 'relations of ruling': its 'colonized','compartmentalized', 'fragmented' condition; the rifts and fractures between various kinds of human activities; and the fact that, to quote Smith again, it has been *"emptied of functions originally embedded in localised relationship"* (Smith, 1987: 6).

One of the notable features of the everyday life critique was the way in which both the details and general structure of everyday life were connected back to the macro-structures

of society. As Sheringham puts it, Lefebvre sought to tear "*the veil with which everyday life constantly masks itself* [to take, for example] *a woman buying a pound of sugar…and tracking…the networks and relationships in which this is embedded…thus identifying…*[an]*… infinitely complex social fact…in the minor individual phenomenon*" (Sheringham, 2009: 140). Social practice theory, by contrast, whilst it explores many of the practices of which everyday life is comprised, tends not to address its general, dysfunctional structure, nor the forces have fostered this. It is perhaps for this reason that 'sustainability' tends to be given a somewhat utilitarian frame, that is, it is primarily seen as a matter of conserving resources through developing more efficient practices (Shove *et al.,* 2012: 139-164; Strengers and Mailer, 2011; Kuijer *et al*., 2013).

If sustainability, however, is understood broadly as pertaining to a vast range of political, social, economic, cultural and technological problems, everyday life is unsustainable in myriad ways, not just the efficiency with which resources are used. It would be helpful, then, to develop tools for influencing 'practices' in ways that can begin to address the entire gamut of sustainability issues. Just as the everyday life critique involved a utopian perspective, that is a sense of what everyday life *could be*, this could infuse the exploration of the practices of everyday life with a sense of potentiality.

The Satisfaction of Needs and the Domains of Everyday Life

We have discussed two contrasting approaches to transition, socio-technical transitions theory and social practice theory. These represent polar ends of the spectrum: the former addresses transition from the bottom-up perspective of the micro-events of everyday life; the latter from the perspective of macro-structures and players, albeit in a far less-top down way than has historically characterised large, centralised political and administrative institutions. We argued that whilst social practice theory could benefit from a more developed use of the concept of levels of scale within everyday life, the abstract way in which MLP uses the concept of scale limits it potential contribution to the design of nested, multi-scalar and integrated socio-technical systems. We also argued that the structure and vitality of everyday life has been severely damaged in the modern era, but it should nevertheless be considered of fundamental importance in transitioning to a sustainable society. We further argued that is important to find a means of contextualizing knowledge that relates to the transition process, to develop more reciprocal relationships between top-down (macro) and bottom up (micro) approaches to transition, and to more clearly conceptualise and define these different levels of scale. Finally, we argued that sustainability transition means developing new practices that are address more issues than simply conserving resources: such new practices would to address the gamut of issues that are damaging the quality and viability of everyday life and their associated lifestyles, and therefore the prospects for all forms of life on the planet as a whole. In this section we discuss the satisfaction of needs and their relationship to the framework of the Domains of Everyday Life. In integrating this framework with social practice theory and the MLP/social-technical transitions theory, it is hoped that many of the issues outlined above can begin to be addressed, and the Domains of Everyday Life framework can itself become more robust.

Needs satisfaction and social practices in everyday life

Although it was never developed, Lefebvre contended that a general theory of needs was a necessary part of the critique of everyday life (Gardiner, 2000: 80-82). Whilst the drive to satisfy needs is the generative force of everyday life, the nature of the relationship between needs and everyday life has remained somewhat obscure. The problem, as the economist Manfred Max-Neef has pointed out, is that there has been a *"conceptual shortcoming"* (Max-Neef *et al.,* 1991: 16) in the way in which the question has been posed: there has been a failure to make a distinction between needs and the ways in which needs are satisfied. As a result, needs tend to be seen as infinitely expandable and variable, according to culture, environment and historical period. Lefebvre himself argued that *"needs are becoming more extensive, more numerous* (Lefebvre, 2008: 175). This position makes it extremely difficult to fashion a coherent and usable theory of needs, to know if needs are being adequately satisfied or if there are needs present in a particular situation that are simply not revealing themselves.

In fact, as Max-Neef argues, it is not needs that are infinite and always changing, but the ways in which they are satisfied. In and of itself, for example, clothing is not a need, but a satisfier for the need for comfort and warmth (and possibly others). If many different kinds of clothing become available and desirable, it is misleading to say we need more clothing: it is the number of satisfiers for comfort and warmth that has proliferated, not the of number of needs. But if the distinction between needs and their satisfiers is not made, it seems as though with every new style of clothing, our 'need' increases. In this case, 'needs' will become an ever burgeoning category as more satisfiers for those needs become available. To extend this argument, it would make little sense to say that a European 'needs' clothing made from cotton or wool whilst an Inuit 'needs' clothing made from fur: both kind of clothing are satisfiers for warmth (or coolness) and comfort. Such satisfiers vary according to social, cultural and ecological context: the need itself remains constant.

The distinction between needs and how they are satisfied is the basis of Max-Neefs innovatory theory of needs *(See Figure 3).* Ten fundamental and universal material and non-material human needs are suggested: Subsistence, Protection, Affection, Understanding, Participation, Idleness, Creation, Identity, Freedom and Transcendence (Max-Neef *et al.,* 1991: 32-33). Whilst these needs are common to all people, their satisfiers vary wildly from culture to culture and place to place and from one historical period to another. Although Max-Neef does connect needs to everyday life, it is apparent that the different ways in which needs are satisfied has given rise to the diversity of forms of everyday life that have arisen all over the planet, making everyday life specific to place.

Two contrasting types of satisfier are identified, by Max-Neef, "exogenous" and "endogenous" (Max- Neef *et al.,* 1991: 34). The former are controlled by social elites within centralised social-political- economic institutions that are not integrated (to connect the critique of everyday life with Max-Neef's theory of needs) into the fabric of everyday life; the latter are embedded within, and therefore controlled by, local communities at the micro, meso and macro levels of scale of everyday life: household, neighbourhood, town, city and region. Exogenous satisfiers are more likely to be "pseudo" than endogenous satisfiers, since they are "generated at the top and advocated for all" (Max-Neef *et al.,* 1991: 34), they

are imposed on local communities. Endogenous satisfiers are more likely to be "authentic" than exogenous satisfiers, since local communities, from micro to macro levels of scale of everyday life, are in the strongest position and have the strongest motivation to identify and develop appropriate means of satisfying their own needs. One of the distinctions between modern and pre- modern societies is the extent to which exogenous satisfiers have been substituted for endogenous satisfiers –that is, the process of need satisfaction has been appropriated by centralised institutions, including national governments and multi-national corporations.

Needs *universal*	**Satisfiers** *unique to time/place/culture*
Subsistence	*Food, shelter, clothing*
Participation	*Associations, churches, councils*
Protection	*Healthcare, shelter*
Affection	*Friendship, family*
Creation	*Workshops, cultural groups, craft, music*
Understanding	*Literature, education*
Transcendence	*Meditation, religion, spiritual practices*
Identity	*Customs, traditions*
Freedom	*Equality, political organizations*
Idleness	*Games, parties, sun bathing*

Figure 3. A simplified rendition of Max-Neef et al.'s matrix of needs and related satisfiers (Max-Neef et al., 1992, pp. 32-36). Everyday life is shaped according to how the needs in the left column are satisfied by the activities in the right column. Some satisfiers will simultaneously satisfy multiple needs.

This is the social dynamic that leads to the 'colonisation' of everyday life described above: everyday life is devitalised by external institutions emptying it, to return to Smith's phrase, *"of functions originally embedded in localised relationship"* (Smith, 1987: 2-6). Since the manner in which needs are satisfied shape everyday life, it is evident that exogenous and endogenous satisfiers will give rise to two correspondingly different patterns of everyday life: broadly speaking, and at the risk of generalising, the former is structured around externally controlled pseudo-satisfiers, the latter around internally controlled authentic satisfiers.

Practices (the ongoing orchestration of meanings, skills and materials) arise out of the motivation to satisfy needs: there are myriad interdependent practices in everyday life that relate to satisfying the needs for subsistence (food, shelter, clothing), affection, participation, understanding, and so on.
Practices, therefore (as is the case with everyday life itself) are to some degree influenced and shaped by available satisfiers. For example the meanings associated with the practices of eating, breakfast, lunch and supper change according to whether satisfiers are mechanistically prepared fast food or mindfully prepared 'slow' food. Put another way, the meaning of these eating practices changes according to whether satisfiers are inauthentic ("pseudo") or authentic, exogenous or endogenous, centrally controlled or embedded within the fabric of everyday life.
Thus, the critical evaluation of the characteristics of satisfiers has important implications for how practices are understood and assessed, and how interventions to influence practices are designed: through focusing on satisfiers, practices could be steered in a way that begins to reconstitute everyday life into "a unified whole" to use Gardner's expression (Gardiner, 2000: 73) to overcome 'compartmentalization' and 'fragmentation' and to replace 'relations of ruling' with 'relations of self- organization. As we argued earlier, social practice theory would be able to make a greater contribution to sustainabilty transitions if it were injected with a more critical perspective on everyday life: connecting practices to Max-Neef 's theory of needs may be one way of doing so.

MLP, socio-technical transitions theory and the Domains of Everyday Life Framework

Everyday life we have argued, is the fundamental context for sustainability transitions. It arises as people strive to satisfy their needs through myriad practices; its dysfunctionality, that is its unsustainability, can at least in part be accounted for by the fact that many satisfiers are exogenous. In other words, local communities are not in control of the satisfaction of their needs.
Within this broad perspective, we have suggested a number of points that may increase the effectiveness of MLP and social practice theory as tools in the sustainability transitions process:

1. The many socio-technical sectors which the MLP seeks to transition need to be symbiotically integrated at the micro, meso and macro levels of scale of human experience/ everyday life.
2. There is a need for clarification in social practice theory as to how practices are enacted at the different levels of scale of everyday life, and how different levels of scale of practice relate to each other.
3. The relationship between transition at the macro and the micro levels of scale of human experience needs to be more clearly conceptualized, as does the relationship between contextualised and decontextualised knowledge.

4. Social practice theory needs to be integrated more effectively with the critique of everyday life and with needs theory. In an effort to address these points and to weave together the different strands of thought they represent, we now introduce the Domains of Everyday Life framework. We hope that these various approaches to transition will be more useful integrated with each other than in isolation.

Everyday life/lifestyles arise out of the satisfaction of needs: the character/form of any particular instance of everyday life will bear a strong relationship to the kinds of satisfiers in use. Food, for example, (classified by Max-Neef as a 'subsistence' satisfier) grown on local smallholdings (endogenous), and sold at local markets (endogenous) will shape everyday life very differently from food sourced from globalised agribusiness and sold in supermarkets (exogenous). Moreover, food grown and consumed in a sociable and convivial environment will act as a satisfier for both 'subsistence' and 'affection'. If all this is connected to a local school system and it is integrated into the school system, it will also act a satisfier for 'understanding'; and if it is a communal activity, it may act as a satisfier for the need for 'participation'. Thus, if satisfiers are integrated synergistically, food production and consumption has the potential to simultaneously satisfy multiple needs (and therefore, as we argue below, the social practices surrounding the need for food will change). This logic can be applied to the satisfaction of any need; if satisfiers are integrated, multiple needs can be met simultaneously and synergistically. Organising everyday life in this way gives it a rich and vital structure.

By contrast, if satisfiers are exogenous, for example if food supply is controlled by multinational corporations, they are very unlikely to be integrated and synergistic: an institution in which satisfiers are *"generated at the top and advocated for all"* (Max-Neef *et al.,* 1991: 34) cannot possibly design integrated satisfiers that work in particular places and local contexts, that is satisfiers that allow for metis. In any case, the drive for efficiency and the maximisation of profits means that needs such as 'affection', 'understanding' and 'participation' are likely to be ignored.

Needs can also be satisfied at multiple levels of scale of everyday life. To continue with the example of food, at the household level of everyday life it might be grown in a garden and eaten with friends and family, thus simultaneously satisfying 'subsistence' and 'affection' needs. It may be grown at the neighbourhood level of everyday life in a small, collectively owned orchard and eaten in a local cafe where friends meet and play cards, thus integrating satisfaction of the needs for 'subsistence', 'idleness', 'affection' and 'participation'. At the city level of everyday life It may be consumed in parks and public squares, and may be sold in farmers markets, thus again integrating subsistence with 'idleness' and 'affection'. Finally, in everyday life at the regional level of scale, food may grown be on fields and in woodlands surrounding the city, within which many different kinds of satisfiers for many different needs will be able to be satisfied. These different levels of scale at which integrated need satisfaction is taking place are not isolated from one another –food grown in the fields outside the city may be sold at a farmer's market and consumed in the household or neighborhood; waste from the household may be returned to the region's fields and households may form relationships with regional farms.

Such designing of integrated satisfiers would open up new possibilities for the niche experiments of MLP and would shift social practices through changing the substance and interrelationships of meaning, skills and materials. This logic can be applied to the satisfaction of all needs: when endogenous, when woven into the fabric of everyday life, myriad different kinds of satisfiers can be created and integrated in myriad ways at each of these levels of scale, leading to a shifts in all manner of social practices and socio-technical regimes.
In this way, everyday life is woven into a complex ecosystem, at multiple levels of scale –household, neighbourhood, city and region[6]– the Domains of Everyday Life (Kossoff, 2011a, Kossoff, 2011b) *(See Figure 4)*. To the extent that needs are satisfied endogenously, that is, self-organized from within the boundaries of the Domains, everyday life will be nested and networked at different levels of scale. Because need satisfaction is controlled from within the Domains, each level of scale is organisationally autonomous. Furthermore, each could be seen as a different kind of community, within which everyday life takes a different form. This organic structure of everyday life characterizes communities in which needs are mostly satisfied endogenously.

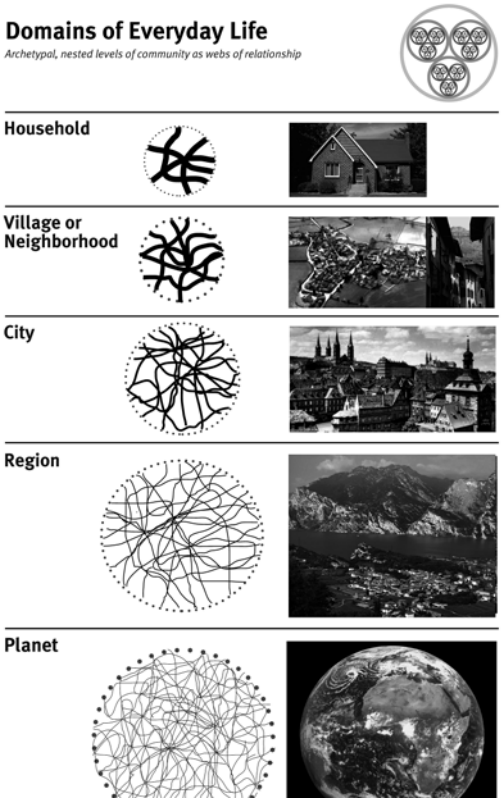

Figure 4. When they are vital, the Domains of Everyday Life represent different kinds of community, each with its own typical characteristics. This is a reflection of the different qualities of relationship established through the multiple ongoing social practices that are enacted at different levels of scale in order to satisfy needs. Diagram by Terry Irwin, 2011.

Needs in pre-modern and early modern societies were generally more often endogenously satisfied than in our own time –this nested and networked structure of everyday life has historically been characteristic of many societies (Mumford, 1961). Such societies were, therefore, far less centralised than our own and many needs were satisfied in integrated ways from within the boundaries of the Domains of Everyday Life. As societies modernise they tend to become more centralised, control of need satisfaction is disembedded from everyday life and ceded to external institutions, satisfiers are often degraded and lose their synergistic integration, and there is a decline in the vitality and the viability of the Domains of Everyday life at all levels of scale. This dynamic leads to the unsustainability of everyday life: the Domains become unstructured and fragmented agglomerations, leading to the multiple ecological, social, economic and political issues from which everyday life is suffering in many parts of the world.

Domains of Everyday Life and MLP

Complexity theory is the shared backdrop of both Socio-Technical transitions/MLP and the Domains of Everyday Life framework. If the purpose of the former is to assist the process of "*maneuvering towards a favourable attractor*", the purpose of the latter is to reconstitute the 'favourable attractors' of everyday life, the Domains of Everyday Life. Most significantly, both frameworks use the concept of 'nestedness' which is central to systems/complexity theory. The nesting of 'niche', regime' and 'landscape' is primarily an analytical device: the levels of scale they represent do not correspond to actual levels of scale of human experience, but more to the dynamics of change within socio-technical systems, and to the relationships between different aspects of these systems, and therefore the points at which successful transition interventions might be made. The Domains framework uses the concept of nestedness as a normative device through which to assess the 'health' of everyday life and lifestyles, and therefore its sustainability.

These two approaches have the potential cross-cut and complement each other: the Domains framework is a tool for of analysing and critiquing the structure and experience of everyday life; the MLP is a tool for analysing and critiquing the structure of socio-technical systems. As we argued above, in order to transition, the socio-technical sectors of food, energy, water, building, communications, health etc will need to be symbiotically integrated at micro, meso and macro scale. Having introduced the Domains framework, we can now be more precise: socio-technical systems will need to be integrated at different levels of scale of everyday life –the Domains of household, neighbourhood, city and region. Transition will involve identifying and working with 'niche', 'regime' and 'landscape' as they occur at each of these levels of scale *(See Figure 5)*.

In developing socio-technical systems 'ecosystems', the MLP would contribute to the development of integrated and endogenous satisfiers, addressing many of the problems of everyday life that we have outlined, beginning its reconstitutions as "a unified whole", or, more accurately, a holarchic pattern of wholes, the nested Domains. To give a very oversimplified example of what would ultimately need to develop into extremely complex socio-technical 'ecosystems' that connect and integrate across all levels of scale, at the level

of the household and neighbourhood, water run-off from buildings and other infrastructure can be directed into gardens and orchards; gardens and orchards can become part of the food and healthcare system and buildings and other infrastructure can be designed to capture water to irrigate gardens and orchards and to store food grown in them. In the process, many different satisfiers of many different needs will be created and integrated within the context, and from within the boundaries of, the everyday life of household and neighbourhood.

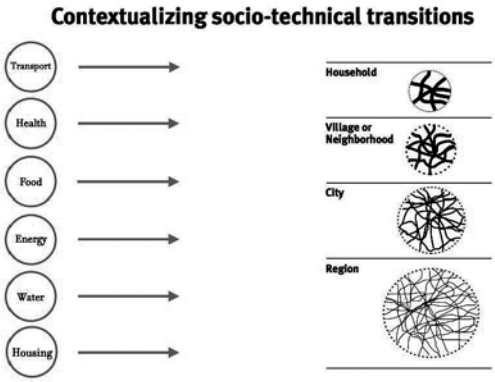

Figure 5. Symbiotically integrating separate sectors, creating socio-technical ecosystems at different levels of scale of everyday life, will contribute to the development of multiple integrated endogenous satisfiers, and assist the reconstitution of the Domains of Everyday Life. Transition involves working with niche, regime and landscape at each level of scale of everyday life.

We observed above (concurring with Schot, Grin and Rotmans) that there is a tension in the relationship between top down/micro and bottom up/macro efforts at transition: the former is closely associated with transition through governance, the latter with transition through grassroots efforts. Grassroots efforts may too easily be relegated to a countercultural fringe without the capacity to scale- up, governance may suffer from lack of contextual knowledge (metis). This is not an easy dilemma to resolve, but the Domains framework may help by reframing the problem not so much as one of an uneasy relationship between the 'top' and the 'bottom' levels of society, but as an uneasy relationship between two different patterns of everyday life, one that is internally controlled and relies on endogenous satisfiers, and one that is externally controlled, and relies on exogenous satisfiers. Currently most satisfiers connected with governance and government are exogenous:

research needs to be undertaken to determine how at higher levels of scale, governance can become more associated with endogenous satisfiers. When governance is located at the levels of the city and region it is more likely to be in a position to do this, since it will be able to support and encourage the creation of integrated satisfiers based on contextualized knowledge at all levels of scale of everyday life that are nested within it.

Domains of Everyday Life and Social Practice Theory

Integrating the Domains of Everyday Life framework with social practice theory may help clarify both: social practice theory can help develop the Domains as a tool for understanding everyday life, and the Domains framework may help us understand how practices can be scaled at different levels within everyday life, and in evaluating needs satisfaction.
The Domains arise out of the process of satisfying needs: they tend to be more viable, vital and sustainable when satisfiers are endogenous and integrated. However, this tells us very little about how the many interconnected practices that are ongoingly enacted in order to satisfy needs. At the household level, a subsistence satisfier such as food may be grown locally or it may be imported, but in knowing this we do not learn very much about daily eating practices, nor how these are connected to, and influenced by, other practices. Whilst we can say, therefore, that need satisfaction underlies the Domains, the Domains should also be understood as ecosystems of multiple interdependent practices: perhaps the Domains could be described as the ongoing enactment of social practices that are motivated by the drive to satisfy needs at the different levels of scale of everyday life. If transition requires that formerly exogenous satisfiers become endogenous (that is, they are reappropriated from centralised institutions) it also requires intervention into the practices through which such needs are satisfied.
We have observed that whether or not a practice is 'complex' or 'bundled' does not necessarily correspond to the level of scale of everyday life at which it is located, and that a theory of needs is important in helping evaluate practices in relation to the quality and sustainability of everyday life. Viewing practices through the Domains of Everyday Life framework, would add to our understanding of how practices are enabled, influenced or inhibited by the level of scale of everyday life at which they occur and the different ways in which the needs by which they are motivated could be satisfied. In turn, this could help innovate new practices. For example, much of the social practice research has focussed on the practice of bathing (showering). This discussion frames bathing as a utilitarian activity that primarily satisfies the need for 'subsistence'. However, if the meaning element in the practice of showering was changed so that it became a leisurely ('idleness') and convivial ('affection') experience (as it has been in many cultures) then it might it be relocated to bathing houses which are in the domain of the city or neighbourhood. With this change in practice, not only would the resources consumed by bathing be reduced, but multiple needs would be satisfied and everyday life would become more vital.

Conclusion: New tools for transition solutions and the transition designer

We began by introducing the new field of transition design, and the transition design framework which has guided teaching and research (See Figure 1). The four areas of this framework –vision, theories of change, mindset and posture, and new ways of designing– are considered to be mutually influencing. Thus, if our account of the integration of socio-technical transitions theory, social practice theory and the Domains of Everyday Life framework (located within 'theories of change') is valid, we can begin to develop narratives and scenarios of future sustainable societies in which everyday life is structured around nested and networked households, neighbourhoods, cities and regions. These are the context for the integration of multiple socio-technical sectors and for the creation of new practices through which needs can be met in integrated and sustainable ways. We can also begin think about how 'mindset and posture' can change: the design and development of integrated satisfiers, practices and socio-technical systems necessitates a more holistic worldview, a posture of collaboration, and a sensibility that enables contextualised understanding of problems. Finally, integrating the three strands that we have described helps to define the kinds of skills that the transition designer will need; an ability to identify satisfiers and to reconceive them so that they become integrated and endogenous; an ability to relate satisfiers to social practices and, by intervening in the elements of such practices (meanings, skills, materials) to steer everyday life towards sustainability; an ability to analyse the dynamics of change in everyday life and, in relation to socio-technical regimes and landscapes, to position niches within it. We hope that the transition designer will be able use such skills to help reconfigure and reconstitute the Domains of Everyday Life, and to make symbiotic connections between them at all levels of scale.

Notes

1. The concept of 'niche incubation', discussed below, represents the incorporation of the principle, derived from non-linear dynamics, of 'sensitivity to initial conditions' into socio-technical transitions theory.
2. We use the term practice theory to describe the work of Shove *et al.* (Shove *et al.* 2012) rather than Schatzki's social ontology (Schatzki 2010).
3. Shove and Walker describe the "*movement of people and things*" in cities like London as "*a consequence of the ongoing enactment of frequent and not so frequent practices*". In this example, multiple complex practices can be said to be occurring at the city level of scale (meso/macro). See Shove, Elizabeth and Walker, Gordon. 2010.
4. One of the advantages of social practice theory is that it traverses sectors: bathing is a practice that has health and employment meanings, and makes use of water and energy sectors, etc.
5. This is dubbed the 'ABC' (attitude, behaviour, choice) paradigm, and arises out individualistic preconceptions about how change occurs (Shove *et al.* 2012: 142).

6. A further Domain of Everyday Life, the Domain of the Planet has been identified and discussed, but is beyond the scope of this paper.

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Resumen: El desafío central de la era actual es la transición hacia la sostenibilidad. Esta transición debe definirse en los términos más amplios posibles. Es un proyecto que es a la vez político, social, económico, cultural, científico y tecnológico: cada dimensión de los asuntos humanos se ve desafiada por la necesidad de transición y, a medida que varios temas alcanzan puntos críticos (cambio climático, inequidad, agotamiento de recursos, pérdida de biodiversidad, etc.) aumenta la urgencia con la que esto debe suceder. La Escuela de Diseño de la Universidad Carnegie Mellon ha respondido a este desafío mediante la introducción de lo que ha llamado "Diseño para la Transición" en los planes de estudio en los niveles de pregrado, posgrado y doctorado (Irwin 2015) y que "*toma como premisa central la necesidad de transiciones sociales hacia futuros más sostenibles y argumenta que el diseño tiene un papel clave que desempeñar en estas transiciones*" (Irwin *et al.* 2015b: 1).

Palabras clave: Diseño para la Transición - vida cotidiana - estilos de vida - puntos de apalancamiento - transiciones sociotécnicas - transiciones para la sostenibilidad.

Resumo: O desafio central da era atual é a transição para a sustentabilidade. Essa transição deve ser definida nos termos mais amplos possíveis. É um projeto político, social, econômico, cultural, científico e tecnológico: todas as dimensões dos assuntos humanos são desafiadas pela necessidade de transição e, como várias questões atingem pontos críticos (mudança climática, desigualdade, esgotamento de recursos, perda de biodiversidade, etc.) aumenta a urgência com que isso deve acontecer. A Escola de Design da Universidade Carnegie Mellon respondeu a esse desafio introduzindo o que chamou de "Design para Transição" nos currículos dos níveis de graduação, pós-graduação e doutorado (Irwin 2015) e que "leva como premissa central a necessidade de transições sociais em direção a futuros mais sustentáveis e argumenta que o design tem um papel fundamental a desempenhar nessas transições "(Irwin et al. 2015b: 1).

Palavras chave: Design for Transition - vida cotidiana - estilos de vida - pontos de alavancagem - transições sociotécnicas - transições para sustentabilidade.
