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Mapping Scales of Change: Attending to Scale Across and Through Practices

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Abstract

Across the social sciences, scale is often understood as the level, size, or scope at which social phenomena are studied, measured, or governed. Practice theory has long been uneasy with such scalar distinctions, seeking to move beyond dominant micro–macro divides. Rather than abandoning scale, this paper asks what it might mean to think in terms of scales of change. Scales of change are conceptualised as the reach, rhythm, and organisation through which practices extend across timespaces and persist, adapt, or falter. The argument is developed through a cartographic sensibility that decouples mapping from representation and approaches it instead as a situated, processual practice of tracing relations between practices, materials, and temporal-spatial arrangements. Mapping operates as an of-the-moment practice that provisionally orders relations, making some trajectories of change visible while leaving others obscure. A cartographic exercise on multi-local dwelling is used as an illustrative case to explore how different ways of tracing practices render different scales of change perceptible. The paper develops a conceptualisation of scale as emergent from practice and shows how shifts in scale reconfigure what becomes visible as change, who can recognise it, and how it can be acted upon.

Keywords

cartography; dwelling; multi-locality; scale; social change

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Introduction

Scale is commonly understood as the relative size or extent of something. Across the social sciences, it typically refers to the level, scope, or register at which phenomena are analysed, measured, and thus managed and governed. Analytical distinctions of scale commonly differentiate among micro, meso, and macro perspectives, as well as between various spatial and temporal registers, such as the local and the global, or the short and long term.

Practice theory has long been uneasy with dominant scalar distinctions, particularly the micro–macro divide that has long structured sociological analysis (e.g., Mills 1959). Rather than organising social life across hierarchical levels, practice theory tends to advance a flat ontology in which phenomena are constituted through practices and material arrangements as they unfold: social phenomena do not exist at different levels but emerge within a single relational field of practice (Schatzki 2016). Large-scale phenomena such as institutions or markets do not provide contexts for smaller ones; rather, both are effects of the same configurations of practice.

This does not mean that practice theory has ignored questions of scale. First, practice theorists have, in part, responded to critiques that the approach focuses too narrowly on small-scale phenomena (see e.g., Schatzki 2011; Nicolini 2016; Shove 2022). Such criticisms of practice theory overlook the foundations of how practices are conceptualised: practices are neither small nor large, local nor global, but are instead dispersed, bundled, and carried across times and spaces through heterogeneous arrangements (Schatzki 2011). Second, scale has also been mobilised within practice theory to extend its analytical reach. For example, Elizabeth Shove engages with so-called ‘large topics’ by tracing how practices connect: how they extend across multiple sites and become reproduced in many places at once (Shove 2022). Recent work on the biosocial further extends this perspective by tracing how practices, including those that matter for public health, are entangled with microbial processes and material environments, showing how even seemingly ‘small-scale’ phenomena are distributed across complex relations of matter, bodies, and milieu (Shove et al. 2026). Often, however, scale tends to be sidestepped rather than developed analytically, despite repeated calls for greater attention to questions of scale and spatial extension within relational and practice-oriented approaches (e.g., Nicolini 2016).

In this paper, scale refers to the spatial, temporal, and relational reach through which practices are coordinated and reproduced. This includes the temporal thickening of practices through repetition, memory, and anticipation, together with the affective attachments that shape how practices endure, matter, and change. Understood in this way, scale is a way of observing different social phenomena, as well as part of how social change is produced, stabilised, and made durable. The suggestion, therefore, is to think about how scale is already embedded in the organisation of everyday practices, for example, through institutions (Blue 2019), and to approach scale as something that emerges through the organisation of practice. The question, then, is: how can scale be engaged analytically without reintroducing hierarchical levels or predefined units of analysis, or in other words, how to not abandon scale but to rework it as part of how change emerges? While not necessarily a new question, it deserves more attention for understanding social change in both practical and theoretical terms. Addressing it requires moving away from treating scale as a pre-given analytical frame. I refer to the emergent configurations as ‘scales of change’: the patterned temporal, spatial, and relational extensions through which transformations of practice emerge, endure, or falter. Scales of change

become visible through the ways practices stretch across sites, synchronise across times, and recruit socio-material arrangements.

The challenge, then, is how to make these emergent scales analytically visible. To address this, the paper turns to mapping as a way of working *with* scale without fixing it in advance. In scientific practice, maps are commonly used to measure, compare, and standardise spatial relations, providing seemingly objective accounts of distance, distribution, and change (Petrovich 2021). Maps are conventionally associated with scale through practices of zooming in and out and through metric calibration, which stabilise boundaries and produce particular views of the world. Through choices of scale, boundary, orientation, and metric, mapping practices foreground certain relations while backgrounding others, contributing to the stabilisation of particular spatial imaginaries and modes of intervention (Crampton and Krygier 2005; Kitchin and Dodge 2007; Hohenthal and Rinkinen 2026). Across social theory, cartography has re-emerged not only as a representational technique but as a way of tracing relations, movements, and processes as they unfold (Kitchin et al, 2013). Cartography can thus be approached as a mode of enquiry attentive to movement, relation, and becoming (Ingold 2021). While cartography has extensively explored the political, representational, and performative dimensions of mapping (see e.g., Braidotti, 2002), it has less often been mobilised to analyse how social change emerges through practices over time and space. In this paper, mapping is treated as a methodological and conceptual sensibility oriented towards tracing connections, following trajectories, and attending to moments where change accelerates, stalls, or intensifies. Rather than producing definitive spatial accounts, mapping is used to explore how relations are made visible and how different ways of tracing them bring different dynamics of change into view.

The paper develops these two core ideas – that scale is emergent from how practices extend and connect, and mappings as means of attuning to those scales and related processes – through an engagement with multi-local dwelling. Multilocal living, referring to living across two or more locales, foregrounds movement, relation, and distributed practices over fixed spatial units, making it a productive site for examining how practices are distributed across times and spaces. Dwelling is approached as a relational accomplishment enacted across multiple locales, infrastructures, and temporal rhythms. This empirical focus allows the paper to examine how change becomes visible as practices are sustained and reconfigured across settings.

More broadly, the paper contributes to debates on practice theory and social change by showing how analyses often falter when they avoid or pre-fix the scales at which practices are constituted and transformed. When attention is directed towards discrete sites rather than relational practices, bounded territories rather than distributed lives, and static moments rather than unfolding processes, the dynamics through which practices change are partially obscured. The focus on change is deliberate: while scale is equally relevant for analysing constancy, repetition, and stability, this paper specifically examines how practices acquire the capacity to transform, endure, or falter across time and space. By proposing a cartographic approach to mapping scales of change, the paper offers a way of understanding social change that foregrounds how change becomes visible, how different ways of tracing it render different dynamics perceptible, and how scale is embedded in the organisation of everyday practices. In doing so, it highlights how particular ways of working with scale shape what kinds of change become recognisable or overlooked. While scales of change are conceptualised as both spatial and temporal, the empirical tracing in this paper foregrounds spatial extension more than temporal differentiation. This reflects, in part, the relative ease with which

connections across space can be followed, whereas temporal scales, whether short, cyclical, or long duration, are less directly traceable and require more explicit analytical framing.

In what follows, I first revisit the notion of scale in practice theory. I then situate the approach in relation to key strands of cartographic scholarship, drawing on these debates as a source of analytical inspiration. These cartographic sensibilities are connected to practice-theoretical approaches to social change and developed through three guiding questions on scales of change, which are subsequently explored through the case of multi-local dwelling. The paper concludes by reflecting on the implications of this approach for understanding intervention and social change within practice theory.

Scale and the Flat Ontology of Practice Theory

Across the social sciences, distinctions such as micro and macro, local and global, or individual and structure organise enquiry by positioning phenomena within often vertically ordered levels. Scalar distinctions pre-structure what counts as a relevant object of analysis and how relations are traced. Such approaches are often considered analytically useful, but they also shape how change is understood. When phenomena are organised through levels or bounded units, change tends to be interpreted as movement within or between them, as shifts from one level to another, diffusion across sites, or variation within predefined containers. In this way, these framings shape what becomes visible as change and what remains difficult to apprehend. They also carry implicit assumptions about causality, positioning higher-level structures or contextual factors as explanatory forces, rather than tracing how patterns are produced through the ongoing organisation and coordination of practices.

Many critiques of the vertical idea of scales as levels have emerged, from the rhizome of Deleuze and Guattari as “... a lateral, decentered, proliferating, and interconnected web of relations...” as described by Colebrook (2021, no pagination) to Latour’s actor-network theory as a response to the “... social scientists soon realizing that the local situation is exactly as abstract as the so called 'macro' one from which they came and they now want to leave it again for what holds the situation together.” (1999, 17) For Latour (1992), the growth of networks through what he calls translations replaces the differences of scale between micro-, meso-, and macro-levels. Related work in geography and anthropology has expanded this vocabulary through notions such as networks, territories, and flows, often presented as alternatives to hierarchical thinking (see e.g., Massey 2005 and Ingold 2021).

In anthropology, for example, the idea of scalability, or the ability to expand, has been criticised for overlooking the heterogeneous nature of social reality (Ingold 2021). Tsing (2012, 506) goes as far as suggesting a theory of nonscalability to pay “... attention to the mounting pile of ruins that scalability leaves behind.” As Tsing says, scalable projects are those that can expand without changing. However, as elements are added, the relations become transformative. Nonscalability theory allows scales to arise from the relationships that inform particular projects, scenes, or events.

Practice theory also unsettles the assumptions of scales-as-levels through its commitment to a flat ontology. Rather than treating social life as organised across hierarchical levels, practice theory approaches the social as constituted through practices and material arrangements unfolding on a single ontological plane (Schatzki 2016). Practices are dispersed, relational, and continuously enacted across time and space. What appear as large-scale phenomena are not explanatory contexts but

effects of how practices hang together, stabilise, and endure, shifting the locus of explanation to the organisation of practices themselves.

As an implication, social phenomena cannot be located within predefined levels. Practices are not confined to bounded sites or scales, but are carried across settings, reproduced through infrastructures and institutions, and coordinated through a variety of temporal rhythms (Southerton 2006; 2013): "...time and space are inherently related constitutive dimensions of action." (Schatzki 2010, xi) The implication of a flat ontology is not, however, that questions of scale disappear, but that they can no longer be resolved by situating phenomena within a hierarchy of levels or by treating scale as a frame external to the unit of analysis. Instead, scale becomes something to be accounted for through the ways practices extend, connect, and are sustained across time and space.

This creates a tension within practice theory. On the one hand, the rejection of hierarchical levels avoids explanatory shortcuts and opens a way of analysing social life as strongly relational and processual (Blue 2025). On the other hand, questions of scale often remain less explicitly developed. Nicolini (2009) has developed the metaphorical movement of 'zooming in' and 'zooming out' of practice as a way of shifting analytical attention between the detailed accomplishment of practices and their wider connections and effects. Zooming out is useful for describing and understanding large-scale changes in terms of a shift in the overall nexus of connected practices. While practices are recognised as extended and dispersed, less attention has been given to how their reach, coordination, and durability can be analysed without reverting to scalar hierarchies.

The question, then, is not whether scale should be abandoned, but how it can be reworked. Rather than treating scale as a classificatory framework, a 'multi-scalar' endeavour (Kasper 2025), or a set of stabilised units of analysis, the task is to approach it as something that emerges through the organisation of practice and becomes visible through the tracing of change. Taken together, these aspects suggest that scale refers to the patterned reach, rhythm, and organisational alignment through which practices gain durability or remain fragile.

Working with Scale: Tracing Change through Cartographic Sensibilities

Cartographic scholarship has long shown that maps do not simply depict spatial realities but actively shape what can be seen, compared, and acted upon. Some cartographic work shifts attention from maps as artefacts to mapping as an ongoing, situated practice. From this perspective, maps are better understood as mappings: spatial practices enacted to address relational problems and brought into being through use (Kitchin and Dodge 2007; Kitchin et al. 2013). Mapping is inherently processual and provisional, emerging through moments of engagement rather than existing as a stable representation. This orientation aligns closely with practice-theoretical understandings of social life, making it possible to trace how change emerges through ongoing activity, coordination, and adjustment, rather than locating it within pre-defined frames or levels. Mapping offers a way to engage with change by foregrounding the selective and consequential nature of relations and the ways they are made visible.

From a processual perspective, mapping is inherently of-the-moment (Dodge et al. 2011). Maps do not exist as stable objects that simply await interpretation; they come into being through acts of engagement, through creation and use. Each instance of mapping constitutes a provisional ordering of relations, which are continually reworked, reiterated, or unsettled as practices unfold. In this sense,

mapping, as any other practice, is a temporally situated activity that reconfigures relations as it is taken up in different contexts. This understanding is crucial for analysing social change, as it aligns mapping with the ongoing, emergent character of practice and enables tracing how different enactments of mapping bring different scales and dynamics of change into view.

Building on these processual accounts of mappings, non-representational approaches further sensitise mapping to movement, affect, and eventfulness (Thrift 2008; Gerlach 2014). Here, mapping is understood as something that happens through embodied engagements, atmospheres, and relations, rather than as a finished product that communicates meaning from producer to audience. This work contributes an attentiveness to becoming and contingency that is particularly valuable for tracing moments where change accelerates, stalls, or intensifies (Ingold 2021). At the same time, its more limited engagement with questions of organisation, durability, and scale points to the need for a practice-theoretical grounding that can account for how change is sustained and acquires reach across time and space.

Practice-theoretical studies have occasionally used spatial representations, such as floor plans, to trace how practices are materially organised. For example, Rinkinen, Shove and Smits (2021) employ floor plans to show how material arrangements are linked to resource flows, energy services, and the coordination of everyday life. Various visual representations have also been used as methodological prompts in studies of domestic life, often as supportive tools in interviews or participatory mapping exercises. Such approaches invite participants to map the spaces and sequences of daily routines, helping researchers to attend to how practices are configured across rooms, appliances, and infrastructures.

Taken together, cartographic sensibilities support an understanding of mapping as an analytical practice oriented towards tracing scales of change. Although cartographies have been central to debates on representation, power, and knowledge (Braidotti 2002; Crampton and Krygier 2005), and more recently also linked to questions of practice and process (Blue 2025), they have rarely been used to examine how change itself is organised, extended, and sustained across time and space. Rather than treating maps as representations or mappings as events alone, the next section approaches mapping as a way of tracing how practices change as they are carried across sites, synchronised across temporal rhythms, and supported through socio-material arrangements.

Mapping Dwelling: A Cartographic Exercise

This section shows how a cartographic sensibility can help to trace scales of change as patterned reach, rhythm, and organisation, using multi-local dwelling as an illustrative case. In Finland and Northern Europe more broadly, multi-local dwelling often takes the form of second-home living, where a substantial share of the population regularly moves between primary residences and rural cottages. In Finland, this practice is particularly widespread: with a population of approximately 5.5 million, there are over 500,000 summer cottages, and more than two million Finns are estimated to spend time in them regularly (Voutilainen et al. 2021). Historically, summer cottages have been modest wooden dwellings used primarily during the summer months and closely associated with leisure and nature. Over time, however, both the size and level of amenities have increased, and cottages are increasingly used year-round. These shifts, supported by improved infrastructure and

opportunities for remote work, have contributed to more sustained and complex forms of multi-local living (Toivonen and Rinkinen 2025).

From this perspective of multi-locality, dwellings are approached as an ongoing accomplishment enacted across multiple locales, infrastructures, and temporal routines. Drawing on Ingold's (2021) understanding of dwelling as inhabiting the world through movement, relation, and engagement rather than occupancy of bounded spaces, attention shifts from where dwelling is located to how it is accomplished across interwoven times and spaces. Multi-local dwelling refers to the ongoing accomplishment of living through which multiple locales, infrastructures, and routines are connected over time. It foregrounds movement and relation, extending the notion of 'translocality' beyond regional limitations implicit in area studies (Greiner and Sakdapolrak 2013). It is thus a productive heuristic for tracing how practices extend across times and spaces and how change is patterned through these extensions.

The cartographic exercises discussed in this section were developed as a structured yet open-ended way for a team of three researchers to trace the organisation of dwelling practices in the context of multi-locality. The mapping was conducted as a workshop involving these three researchers, who each reflected on their own experiences of multi-local dwelling and mapped their primary and secondary dwellings. One of the researchers planned and organised the workshop. The workshop lasted approximately seven hours and consisted of three rounds of individual mapping activities, followed by explanations and collective discussion. After the workshop, each researcher produced a written reflection on each phase of the exercise, which was analysed together with the resulting mappings. The exercise was designed to shift analytical and scalar vantage points and to foreground relations that are often difficult to apprehend through interviews or observation alone. Participants mapped their primary and secondary dwellings (summer cottages, in this case) through a series of cartographic vantage points: the layout of the dwelling, the surrounding plot and buildings, the wider town or service landscape, and a connective map linking the sites. These mappings were treated as prompts for reflecting on how dwelling practices are organised across space and time, acknowledging that all mappings are partial and situated rather than comprehensive accounts (Haraway 2013).

The exercise unfolded in three phases. The first phase produced an overview of participants' multi-local arrangements, mapping recurrent places, movements between them, related resource flows (e.g. water, food) and the rhythms through which everyday life was distributed across sites. This initial mapping was intentionally representational in character and functioned as a shared point of orientation for discussion. The second phase involved a series of zoomed mappings that focused on specific places and practices, attending to how activities were arranged spatially, how similar practices took different forms across locations, and how practices in one place were linked to activities and demands elsewhere. These zoomed mappings shifted attention from sites as containers to the relations and connections through which practices were sustained.

Thirdly, alongside these more recognisable cartographic exercises, we also experimented with what can be described as inefficient mappings. Drawing inspiration from Linda Knight's (2021) work on inefficient mapping, these exercises deliberately resisted clarity, accuracy, and optimisation as mapping virtues. Inefficient mapping foregrounds the non-representational dimensions of spatial experience, such as affect, atmosphere, and embodied attunement, by disrupting habitual modes of seeing and recording (Knight 2021). As Knight argues, affect can function as a powerful force for attuning to the world in non-representational ways, allowing aspects of experience that exceed

propositional description to enter the mapping process. Rather than aiming to stabilise relations or produce legible outputs, inefficient mappings were used here to stay with ambiguity, friction, and partiality, and to trace dimensions of dwelling that are difficult to capture through conventional cartographic means.

Throughout, mapping was treated as a conversational and processual practice. Discussion formed an integral part of the method, allowing participants to reflect on their use of visual cues and on the differences and linkages between their mappings as they emerged during the mapping process. In this way, the exercise deliberately combined representational and non-representational elements: representational maps were used instrumentally to prompt reflection, while the analytical focus remained on movement, rhythm, and relational extension. This methodological orientation aligns with the paper's broader argument that scales of change are not given in advance, but emerge through the ongoing organisation of practice across dispersed timespaces.

Multi-local Mappings

In the dwelling maps, which often resembled apartment layouts, attention gathered around the choreography of everyday practices: where eating, heating, cleaning, resting, and storage take place. Markings were made to indicate where water and electricity are used and how resources flow within the apartment or house (see Figure 1). This helped clarify which spaces are intensively used and which remain peripheral. It also showed how similar practices, like cooking, are arranged differently across dwellings while remaining recognisably linked.

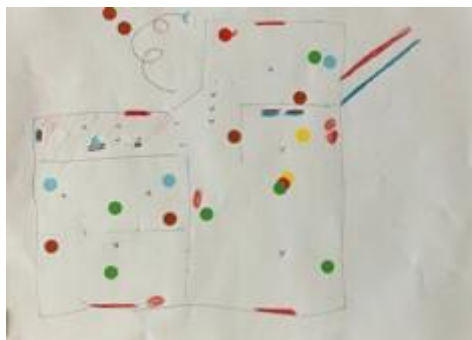
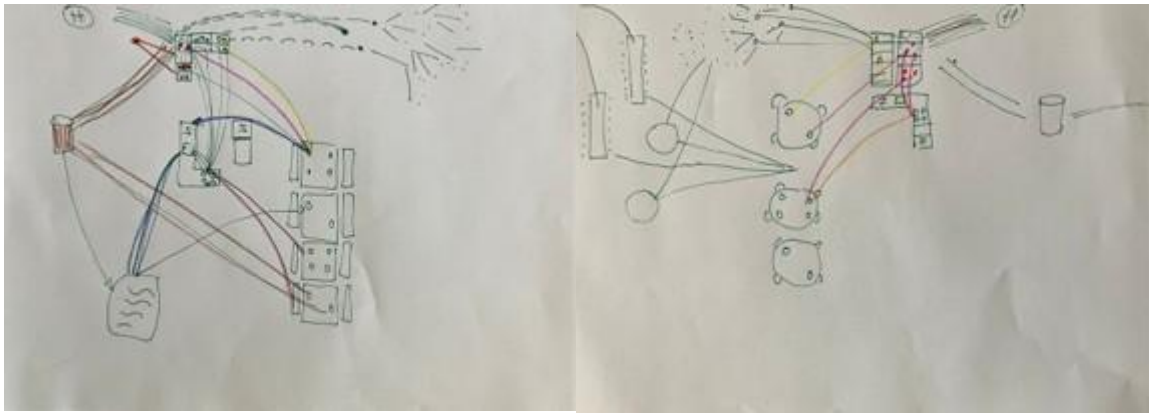


Figure 1: Urban dwelling map by one participant.

Mapping doings, like eating, made various relations and differences explicit. As illustrated in Figure 2, food acquisition, storage, preparation, and consumption were organised differently across the urban dwelling and the summer cottage, while remaining connected through wider arrangements. The participant mapped in detail the organisation of daily meals, their preparation methods, and sources of foodstuffs (for example, whether food came from a garden, local shop or supermarket). A meal that relied on a freezer, dishwasher, and large refrigerator in the primary dwelling might instead involve cool storage, outdoor grilling, or more frequent shopping trips when at the cottage. The maps also highlighted how activities in one location depended on arrangements elsewhere. Food was often transported between dwellings, while differences in shopping opportunities, storage capacities, and cooking facilities shaped how meals were planned and prepared. Practices appeared not as place-bound activities, but as distributed accomplishments sustained through recurrent coordination.



Figures 2 and 3: Mappings of food resourcing, preparation, and eating by one participant in (2) the summer house, and (3) the urban dwelling.

The plot maps expanded this field of relations beyond the interior to include outbuildings such as sheds and saunas, pathways, gardens, and shared or private yards. Zooming to the scale of dwellings and their surrounding plots foregrounded the socio-material organisation of everyday activities: where tools were kept, how routines were distributed across buildings, and how movement between spaces shaped the flow of tasks. For instance, practices associated with washing, heating, gardening, and food preparation often extended between the main dwelling, sauna, sheds, and outdoor work areas. Rather than isolating practices within the confines of the home, these mappings further revealed how dwelling is sustained through connections to wider arrangements: storage spaces, pathways, outdoor work areas, and water points, many of which were structured seasonally. Plot-level mappings thus showed how similar practices can be configured differently depending on spatial layout, available materials, and the relations connecting indoor and outdoor spaces. In doing so, they highlighted how dwelling practices are extended, adapted, and coordinated across the full terrain of domestic life rather than contained within a single building.

The town or village maps foregrounded routines of provisioning, mobility, and service use that connect dwelling to wider infrastructures and institutions. Zooming in on specific towns or municipalities shifted attention from ‘inter-place’ relations to patterns of movement within places. These maps traced everyday routes, routines of provisioning, and modes of mobility, revealing marked differences between urban and rural settings. In urban contexts, movement tended to be dispersed across multiple destinations and often combined with other practices, while at summer cottages, mobility was more locally concentrated and oriented toward leisure, subsistence, and care of place. These contrasts did not simply reflect different locations, but different temporalities of practice: compressed and sequenced in everyday urban life and more elastic and less time-pressured in cottage settings. These mappings particularly functioned as sites of enquiry that made organisational reach visible. Practices that extend across dwellings often draw on a wider range of elements, technologies, competences, routines, infrastructures, and expectations, supporting resilience while also resulting in more complex reconfigurations. Tracing these extensions brought into view how practices acquire the capacity to endure, adapt, or resist change through their spatial dispersion and temporal thickening.

The connective maps assembled these relations, producing a picture of participants’ multi-local arrangements at a regional scale. Some administratively proximate places, such as nearby cities used

for transit or occasional errands, were excluded, while more distant locations associated with recurrent practices, work obligations, or leisure were included. Participants marked places they considered part of their multi-local lives, the frequency of travel between them, and modes of transport. What emerged was not a comprehensive spatial inventory but a selective geography shaped by duration and distance, as well as repetition and mode. This selectivity highlighted that multi-locality is defined by ‘spheres’ of practice sustained through time and movement.

All in all, what becomes visible through this sequence is a dispersed configuration rather than a hierarchy. Practices do not travel intact from one map to another; they are reconfigured as they extend. Cooking and eating, for instance, take different forms when traced within homes and plots, across dwellings, and in relation to service infrastructures and supply routines. These differences indicate variation within a dispersed arrangement rather than separate practices. Mapping across vantage points thus makes visible how practices are simultaneously localised and extended as well as anchored and mobile.

Finally, inefficient mappings involved embodied protocols adapted from Knight’s (2021) in situ work but reoriented towards recollection and anticipation rather than immediate spatial presence. Participants decided to experiment: for example, to draw without looking, to layer marks on translucent sheets, and to work with materials whose resistance, opacity, or fragility shaped the resulting traces (Figure 3). Participants, for example, represented moments of departure and return alongside periods of residence. One participant used layered traces to depict the temporal sequence of preparing the cottage for winter, including cleaning, emptying water systems, storing food, and securing buildings against the cold season. These mappings foregrounded how dwelling practices were organised not only around current activities but also around anticipated future engagements. The cottage appeared not simply as a place occupied in the present, but as a site continuously enacted through preparation, anticipation, and care across seasons. These inefficient mappings did not function as representations of dwelling practices, but as devices for attuning to how practices are affectively charged and temporally thickened. In doing so, they complemented the more relational mappings by foregrounding how scales of change are also felt, remembered, and anticipated, and how such affective dimensions shape the endurance and transformation of practices across dispersed timespaces.



Figures 4 and 5: Photographs of inefficient mappings by two workshop participants.

Attention was also directed towards sensations and affects associated with multi-local dwelling. Layering introduced temporality into the inefficient mappings, allowing different moments, memories,

and orientations to coexist without being resolved into a single coherent image. Mappings attended to affective dimensions of multi-locality such as stress, anticipation, attachment, and ambivalence, for example, in moments of leaving and returning, as described by one participant:

“Before the mapping started, [we] talked of leaving practices. This caused some kind of affect of anxiety in me, which transferred to my mapping as a need to do something violent (see Figure 3). I rolled the paper to a form of a cylinder and pushed a pencil through it. I thought of the points where the pencil pierced the paper as my home and the cottage, and the pencil formed an axis around which the life is circulating. As much as I like being in both places, there is always some degree of stress related to the movement between the places that culminates in the moments of leaving and returning.”

Different feelings of cold and warmth, comfort and unease, anticipation and reluctance were surfaced in relation to cleaning, winterising, checking, preparing for return, particularly as they emerge in moments of transition between dwellings. Through gestures, materials, and abstraction, these maps traced experiences that resist straightforward depiction but nonetheless shape how practices are organised and sustained. ‘Inefficiency’ was a way of resisting the rationalising (or distancing) gaze and making visible the affective forces that pattern multi-local life and condition how practices endure.

Through this cartographic exercise, multi-local dwelling becomes visible as a relational accomplishment held together through movement, repetition, and arrangement. The value of mapping lies in its capacity to attune analysis to how scales of change take form through the organisation of everyday activity: through patterned reach across sites, rhythmic recurrence over time, and the infrastructural and organisational supports that lend practices durability. Taken together, these mappings did not produce a single account of multi-local dwelling, but a set of partial tracings that made different dimensions of scale visible. By shifting cartographic focus from regional relations to local movement, domestic arrangements, and practice-specific and affective mappings, the exercise demonstrated how scales of change interweave and emerge through patterned reach, rhythm, and organisational extension. Multi-local dwelling appears not as a matter of occupying multiple sites, but as an ongoing accomplishment held together through movement, repetition, material arrangements, and affective investment.

Discussion: Weaving Scales of Change

The particular question of this paper is how and why scale can be used to think about social change. Rather than treating scale as a pre-given analytical level or as an external framework within which social processes unfold, the paper examines how scale is implicated in the organisation of the plenum of practices. This involves three related shifts. First, in what sense is scale not external to social life, but embedded in the organisation of everyday practices? Second, what becomes visible as change when the scale of analysis shifts? Third, how do different ways of working with scale carve out different dynamics of change? As a consequence, scale is not something within which practices are located, but something that takes shape in how they are extended, coordinated, and sustained. From a practice-theoretical perspective, what appears as change at a particular scale is therefore not given in advance, but emerges through how practices are followed, related, and brought into view.

The first question concerns the question of how scale is embedded in the organisation of everyday practices. In attending to scale in this way, the understanding of how practices extend across space becomes analytically salient. It is widely recognised that practices are carried across multiple locales and sustained through connections that may be uneven, partial, or fragile (Nicolini 2009, Shove, 2022). In the mapping exercise, for instance, activities such as cooking and provisioning were traced across homes and cottages, revealing how food preparation in one site depended on storage capacities and resources located elsewhere. Practices are not confined to bounded sites or discrete contexts, but enacted across dispersed locales, reproduced through infrastructures and institutions, and coordinated through patterned temporal rhythms. This suggestion resonates with relational understandings of space and practice. If space is understood not as a container but as a meshwork of movement and relation (Ingold 2008), and if social life unfolds through interwoven timespaces of activity (Schatzki 2010), then mapping cannot be about locating practices at fixed points or levels. Instead, it becomes a matter of tracing how practices are carried across dispersed locales and sustained through infrastructures and meanings (Massey 2005).

A second aspect related to how scale is embedded in the organisation of everyday practices concerns how practices are patterned over time. Practices are ongoing accomplishments, reproduced through repeated performances shaped by rhythms, cycles, and interruptions. This temporal patterning became visible in the mappings of seasonal rhythms and transitions between dwellings, particularly in moments of leaving, preparing, and returning, where practices were oriented not only to present use but to anticipated future states. Change unfolds unevenly, through moments of adjustment, periods of stability, and longer-term shifts in expectations and arrangements. Temporal scale, in this sense, refers to how practices endure, synchronise, and transform over time. Timing is not fixed but continually accomplished in practice (cf. Blue, 2025). The mapping exercise made this temporal patterning visible through annotations of seasonal rhythms, movements, and anticipations. A further aspect concerns how material and organisational arrangements support and stabilise practices. Practices vary in how strongly they are connected to infrastructures, competences, and institutionalised forms of coordination. These connections shape how practices acquire durability or remain open to reconfiguration. What might be described as scale here concerns how practices gain reach and resilience through the arrangements they recruit and align with.

The second, and related, question is what becomes visible as change when the scale of analysis shifts. Social change becomes legible through the devices and conventions that organise attention: the indicators we privilege, the boundaries we draw, the maps we trust, and the timelines we adopt. In the cartographic exercise, this was evident in how different mapping phases foregrounded different forms of change: overview maps highlighted mobility and resource flows, while zoomed mappings made visible variations in how similar practices were organised across sites, and inefficient mappings brought out affective tensions not captured elsewhere. Tracing multi-local dwelling across dispersed sites, temporal rhythms, and socio-material arrangements shows how scales of change take shape through everyday accomplishment, appearing as interwoven dimensions through which practices endure, adapt, or falter.

Shifts in scale reconfigure how change is recognised and by whom. Different scales speak differently to different audiences, drawing on established conventions for what counts as a relevant metric, indicator, or signal of change. The scale ruler illustrates this: while the ruler itself remains the same, its markings align more readily with some systems of measurement than with others. In similar ways,

some scales of change resonate with established repertoires of expertise, governance, and policy-making, while others remain difficult to read or act upon. Changes unfolding through dispersed practices may therefore remain unrecognised because they do not align with dominant conventions of valuation and intervention. For example, temporal, spatial, and organisational extensions take form *together* through practice. Change emerges through the reconfiguration of these entanglements, as practices are continually aligned, adjusted, and recomposed across time and space. Temporal rhythms, spatial relations, and organisational supports do not operate independently, but co-constitute one another in the ongoing accomplishment of practice. Where these alignments hold, practices acquire durability and appear stable; where they loosen or conflict, practices become fragile and open to transformation. From this perspective, change is not located at a particular scale, but unfolds through shifting configurations of relations that vary in their reach, coherence, and persistence.

Multi-local dwelling raises the question of whether understandings of home are flexible across sites, or whether stable standards of comfort, convenience, and adequacy travel with practices as they extend. When expectations associated with 'being at home' are reproduced across multiple dwellings, practices of heating, provisioning, working, and leisure tend to be reconfigured to meet similar standards in each location. From this perspective, the growing resource intensity of second homes is not simply a matter of technological upgrading or lifestyle choice, but an effect of how practices carry normative ideas of home across sites. Mapping multilocal dwelling reveals how perceptions of potential change, such as 'energy futures', are shaped not only by infrastructures and devices, but by the circulation of expectations about what home should provide. Attending to these circulating imaginaries helps explain how practices acquire durability and scale across locations, and why efforts to steer more sustainable forms of multi-local living must engage not only with sites or technologies, but with the relational and normative extensions through which home is enacted.

This has implications for how interventions are imagined. For example, mappings of energy transition often rely on stabilised spatial snapshots such as discrete sites of action and bounded territories (Hohenthal and Rinkinen 2026). Such framings obscure how practices gain durability through extension and repetition, and they risk producing mismatches between the scale of intervention and the scale at which practices are organised. Engaging with social change involves working with temporal rhythms, tracing relations across sites, and attending to the infrastructures and arrangements through which practices endure.

Mapping, approached as a methodological and conceptual sensibility, supports this reorientation by making extension, rhythm, and organisational reach traceable. The cartographic exercises discussed earlier do not resolve the complexity of practice change, but they help surface how practices are carried across timespaces and how change becomes distributed rather than located. Mapping offers a way of staying with complexity while keeping sight of practical consequences: what becomes visible, what remains overlooked, and how these visibilities shape response.

Finally, the third question is: How do different ways of working with scale carve out different dynamics of change? By bringing processual understandings of mapping into dialogue with practice theory, this paper positions mappings as a means of tracing scales of change as they are enacted in everyday life. In this sense, mapping scales of change involves shifting attention from identifying levels to examining how different tracings make certain relations visible, render particular dynamics of change perceptible, and foreground how scale is embedded in the organisation of everyday practices. This

has raised the question of how cartographic approaches can help us better understand how practices change.

Mapping is particularly apt for thinking about scale and practices because it provides a way of tracing relations, movements, and extensions without presuming hierarchical levels or bounded units. It follows how practices extend across temporal rhythms, spatial relations, and organisational arrangements, and how these extensions shape the visibility, durability, and contestation of change. A defining feature of mapping is that scale remains relational: shifting the scale of tracing reconfigures what becomes visible. The same practice appears differently depending on how it is traced, within a household, across infrastructures, or across multiple sites of performance. These are not simply different levels, but different configurations of relations through which change is understood. Change may unfold gradually or abruptly, remain localised or become widely distributed, stabilise or remain fragile depending on how practices are extended and aligned.

In this sense, mapping does not provide a new scalar framework but an analytic orientation. It redirects attention from levels to relations, from bounded units to trajectories, and from static representations to the ongoing organisation of practice. Scale becomes perceptible through how practices are traced, and social change emerges as a relational and processual accomplishment across interwoven timespaces. Scales of change are integral to how practices endure and transform. Attending to them through cartographic sensibilities opens an understanding of social change that stays close to everyday activity while remaining attentive to its wider ramifications. The question is where change occurs, but also how it is made visible, organised, and sustained through the tracing of practices. A further question could be how these patterned extensions enable or constrain possibilities for recognition and intervention.

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