Examining New Processes for Learning Space Design
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Overview
The emergent literature on learning spaces in higher education articulates a desire to better engage academics and other stakeholders in the conceptualisation, design and development of university spaces.

New processes that aim to support more participation in design are proposed. This chapter reviews a range of these processes using an activity-theoretical concept of distributed agency. Much of the examined literature proposes to intervene in estates life cycles within particular, bounded activities. It is argued that forming long-term relations between university stakeholders, based on decentralised negotiation and peer review, would further expand the possibility of socially producing university learning spaces.

Introduction
Perhaps one of the most elementary characteristics of the nascent learning spaces literature is the argument that the material environment is, or rather should be, a core pedagogical concern (Jamieson et al. 2000; Temple 2008). Taken seriously, this general perspective invites a host of more particular questions. How to theorise the relationships between learning and space? How to design spaces so that they support a range of pedagogical objectives?

One particular query is driven by the notion that many individuals with an interest in pedagogical issues have little input into institutional space. This question, which is the focus of this chapter, might be phrased as follows: how can people whose main interest is in pedagogy gain access to institutional discussions of space and effectively make their voice heard? Questions such as this are prominent within the literature, though straightforward solutions remain elusive (Boys 2011: 101).

When considering the range of questions related to learning spaces, we must immediately acknowledge that many of the underpinning issues are linked. The absence of clear theoretical perspectives on learning space relations, for example, serves to constrain the manner in which university spaces are designed and evaluated (Bligh and Pearshouse 2011). The present author has previously
written about how a range of different pedagogical and learning sciences perspectives can provide insight into relationships between learning and space, while acknowledging that these perspectives are in disagreement on a range of key issues (Bligh and Crook in press). This chapter proceeds from the view that space should be seen as socially constitutive, created as a social product and manifest through institutional and societal forms that act on our consciousness. Boys (2011) adopts a broadly compatible viewpoint, though with an idiosyncratic emphasis on the ‘communities of practice’ literature that I will not maintain here. Boys also provides a useful overview of relevant developments in architectural theory.

The issue of broadening access to institutional space design processes has sparked much discussion within the literature. To interrogate such work, and to frame my later arguments about the potential for denizens’ more extensive engagement with space production, I use several concepts developed by Engeström (1987, 2008). These concepts, such as distributed agency, originate in an analysis of workplace teams underpinned by activity theory. This work is sufficiently extensive that a large degree of abbreviation is required, and I endeavour to explain terms as they arise. Nonetheless, it is essential to set out from the beginning that Engeström’s (1987) influential formulation of activity systems forms the backdrop to the present analysis.

Engeström describes collective activity as relating subjects, objects and communities within interlocking processes of production, distribution, exchange and consumption (terms that Engeström adopts from Marx’s Grundrisse). These interlocking processes are mediated by a complex structure of tools, rules and the division of labour. Systemic contradictions within and between activities act as a motor of change because human beings, with varying degrees of success, attempt to overcome contradictions and, in doing so, reshape their activity systems.

Typically, the learning spaces literature suggests that space management processes ought to become more inclusive towards academics and staff developers, students, and technical and administrative support staff. These stakeholders are not themselves a homogeneous group. Yet, I will often use the term denizens to highlight some aspects that they do have in common. First, a denizen is an inhabitant; in most cases, their opinion of institutional space is sought because they inhabit those spaces and are thought capable of providing insight into how learning happens there that would otherwise remain inaccessible to estates managers (and their commissioned architects). Second, a denizen is only partly enfranchised; existing space management procedures and norms restrict the extent to which their opinions about space are institutionally heeded, relative to other actors such as estates managers, architects and, perhaps, timetabling officers (the analogous term for whom would be citizens). Third, the expertise of these new contributors with regard to spatial
concepts and design will be limited; concerns about the material environment will hitherto have fallen largely outside their professional remit. So, it seems necessary that they receive appropriate support when contributing their ideas. This chapter critically reviews a number of approaches that seek to provide such support.

To examine these issues, I consider a selection of proposed mechanisms that aim to support denizens’ wider participation in learning spaces design processes. The mechanisms examined take the form of activities where the object appears to be, in turn: consensus and ownership (vis-à-vis innovative spaces), the local experiences of space users, institutional processes (and their spatial implications), the development of design briefs, and academic value in institutional identity. Many of these mechanisms appear to be relatively contained activities with defined boundaries, as yet undertaken only at relatively small scale. This is partly a function of their novelty, and their typical reportage as case studies, yet it is a limitation when the mechanisms are contemplated within the context of established estates management processes. I conclude by considering what it would mean for denizens to engage more extensively in the social production of the spaces they inhabit.

**Distributed Agency**

In this chapter, I consider a range of specific examples of work that involve denizens within processes of learning space design in novel ways. I focus on these examples of new processes at the expense of the (much larger) body of work that proposes ‘design principles’ for spaces based on pedagogic insight. In each case, I aim to emphasise and critique the nature of the distributed agency that is attained. I borrow from Engeström in order to provide content for this phrase:

I argue that employees’ collective capacity to create organizational transformations and innovations is becoming a crucially important asset that gives a new, dynamic content to notions of collaborative work and social capital. In philosophy, sociology, anthropology, and cognitive science, such capacity is conceptualized as distributed agency or collective intentionality.

(Engeström 2008: 199)

As this quotation illustrates, issues of distributed agency are recognised as important for their capacity to produce innovation within institutional and organisational contexts. What, then, can we say about the ‘dynamic content’ generated by the kinds of collaborative work envisaged within the learning spaces literature?
Engeström (2008: 217) suggests that a number of prerequisites must be addressed if distributed agency is to have any meaning: distributed agency must be ‘purposefully cultivated’, the attendant collaboration facilitated, and the agency manifest ‘in situations of collaborative decision making and problem solving’. Engeström (2008: 207) investigates manifestations of distributed agency in several concrete cases, such as inter-agency working in a Finnish health care setting, and concludes that ‘five principles of cultural-historical activity theory seem relevant for the study of collective intentionality and distributed agency’. Since I will rely on these five principles in the remainder of this chapter to examine how distributed agency is manifest within new processes of learning space design, it is necessary to begin by providing a brief summary:

1. **Object-orientation.** This principle ‘calls attention to the object of the activities under scrutiny’ (Engeström 2008: 213). We need to ask questions such as ‘What actually is the object here? What are these people talking about and trying to accomplish?’ (Engeström 2008: 222). Objects give purpose and meaning to collective activity, yet they can be frustratingly difficult to construct (Engeström 2008: 204). Moreover, forming a shared object must be regarded as a major collaborative, analytical achievement (Engeström 2008: 163).

2. **Mediation by tools and signs.** This principle asks us to look at the artefacts that mediate the activity. More specifically, Engeström suggests that we examine ‘the potentials of artifacts as means of eliciting or triggering voluntary action’ (Engeström 2008: 223).

3. **Mutual constitution of actions and activity.** This principle focuses attention on the links between the situated, contingent and concrete decisions that are made within the activity and more ‘future-oriented visions’ (Engeström 2008: 214).

4. **Contradictions and deviations as source of change.** This principle requires that we examine the systemic tensions within the activity (Engeström 2008: 215). As outlined in the introduction, activity theory suggests that contradictions are a driving force of systemic change and innovation, as people attempt to overcome the contradictions that confront them.

5. **Historicity.** This principle directs us to ‘explore the successive and intersecting developmental layers, including the emergent new ones, in the activities under scrutiny’ (Engeström 2008: 215).

It should not be imagined that each of these principles will feature equally throughout my subsequent analysis. Some principles may feature more prominently than others within discussion of particular approaches, while the nature of how work is documented in the literature will serve to restrict the
reach of my analysis. In particular, my examination of historicity will be repeatedly rendered problematic by the case study format of most source materials – wherein authors are keen to demonstrate how their approach confronts historical problems and might lead to the future design of better spaces, but devote rather less attention to discussing how their own methods might be further developed in light of experience.

In what follows, I organise work from within the learning spaces literature into clusters according to the object-orientation of attendant reports. While my method of exposition will necessarily vary by context, as a default I will start by examining the relationship between the object and the history of the work (the existing problems that the authors suggest they are addressing), before subsequently examining, in turn, the nature of mediation by tools and signs, the relationship between actions and activity, and the systemic contradictions.

Consensus and Ownership

The argument that participatory design enables the integration of participants’ perspectives, and fosters a feeling of ownership with regard to the resulting spaces, is prominent within the learning spaces design literature (see Boys 2011: 101–4). Here, I focus on two (related) examples of work, both from Australia, where these issues are explicitly made into the object of activity: the pedagogy–space–technology (PST) framework of Radcliffe (2008), and the pedagogy–space–people–technology design model (PaSsPorT) of Reushle (2012). Both of these examples focus on issues of consensus and ownership within a particular institution, though Radcliffe (2008: 14) also discusses how the lessons learnt might be consolidated across the nascent (Australian) learning spaces community.

Both Radcliffe (2008) and Reushle (2012) start out by railing against the power disparities between professions evident in the procedural norms of estates management. Reushle (2012: 89) sets out her desire to move towards more input for ‘users’ (by which is meant teachers and students) and away from procedural domination by technological, architectural and operational considerations. Radcliffe (2008: 11), additionally, suggests that new pressures – such as ‘social patterns, generational change, a changing funding environment, new and emerging technology and the shift to a more learner-centred pedagogy’ – are placing pressure on these norms and ‘driving innovation and experimentation in the design of learning spaces’.

The reason that consensus and ownership is set as the object of the activity in these cases is because the authors desire to create new, experimental learning spaces within an institutional setting, and wish to ameliorate some of the attendant risk. Radcliffe (2008: 12), for example, is mainly concerned to support
the development of what he calls ‘next generation libraries’, ‘collaborative learning centres’ and ‘advanced concept teaching spaces’. Reushle (2012: 88–9) specifically documents the development of the technology-enhanced learning laboratory (TELL) at Queensland, a ‘facility for staff and students to investi-
gate technology-enhanced learning innovations’ intended as an ‘enabler of change’ rather than a ‘fixed design’. In both cases, it seems crucial that local stakeholders ‘buy in’ to the new spaces. Reushle (2012: 96), for example, suggests that the iterative, design-evaluation cycle she describes creates a ‘shared vision’ across stakeholders so as to ‘promote the TELL across the university’. More explicitly, Radcliffe (2008: 11) states: ‘In the early years of occupation all the people involved to this stage [conceptual design] should be the promoters of the initiative.’ The object here is not merely about consultation, of a type already evident in the procedural norms of many institutions. Instead, the aim is to change people so that they become political allies within the institution, supportive of the (unorthodox) spaces that are designed.

The mediating tools of PST and PaSSPorT are similar, since Reushle (2012) cites PST as a major influence on the development of PaSSPorT. Two tools are emphasised in each case: a flow diagram and a tabulated set of trigger questions. Each is intended to be used by stakeholders to reflect on ideas and outcomes ‘at every stage in the life cycle of a learning space’ (Reushle 2012: 92). The flow diagram is constant and the structure of the table similar in both frameworks, while the range of particular questions differs. The flow diagram provides a graphic illustration of suggested relationships between pedagogy, space and technology: it is suggested that pedagogy is enabled by space and enlarged by technology; that space encourages pedagogy and embeds technology; and that technology enhances pedagogy and extends space (Reushle 2012: 92).

The trigger questions presented in the table are deliberately intended to be ‘generic’; justification for this is sought on the grounds that by ‘using a set of generic trigger questions all stakeholders potentially have equal access to the design conversation’ (Radcliffe 2008: 14). Within the PST framework, trigger questions are divided across two columns – conception and design, and implementation and operation – and suggested questions are provided that focus on pedagogy, space, technology and ‘overall’ (Radcliffe 2008: 15). Within PaSSPorT, an additional row is provided for questions about people. The range of questions formulated in each case seek collective specification regarding a wide range of ‘who’, ‘what’, ‘which’ and ‘how’ issues. Importantly, the completed table provides a persistent record of the design discussions: ‘[PST] is inherently self-documenting and aides [sic] the elicitation of lessons learned for future projects’ (Radcliffe 2008: 14).

What is noticeable about many of the questions in both frameworks under examination is the predominance of questions related to future-oriented visions
as opposed to those seeking concrete, contingent decisions. For example, of the 26 clusters of questions in the PST framework, only one, relating to the conception and design of space, asks for detailed decision-making. Even this question is somewhat open-ended, being set out as follows: ‘What aspects of the design of the space and provisioning of furniture and fittings will foster these modes of learning (and teaching)?’ (Radcliffe 2008: 15).

The underlying systemic contradiction driving the kind of change proposed by both PST and PaSsPorT seems to be that between producing innovative space and the attendant risks of doing so. The need to produce innovative space is driven by perception of broad market forces and by aims to support different forms of learning. For example, Radcliffe (2008: 11) posits a need to challenge those students of the current generation who are bored, as evidenced by their ‘net-surfing, instant messaging, and text-messaging during scheduled meetings’. Yet, the attendant risk is that students and staff might view the new spaces negatively. As Jamieson (2008, quoted in Boys 2011: 103) argues elsewhere: ‘Understandably, students may not favour situations of change where they perceive that the adoption of new teaching practices may jeopardise their own learning experiences and/or grades.’

Both Radcliffe (2008) and Reushle (2012) seek to resolve this contradiction by explicitly taking risks within particular spaces set up to provide a capacity to experiment (Reushle 2012: 96). These experimental spaces will require political support across all stages of their life cycle, including design, and these processes aim to develop an appropriate network to provide such support. Such a diplomatic initiative inevitably involves a desire to work, where possible, within existing infrastructures – in particular, to cooperate, wherever possible, with the established institutional norms of estates management. As Radcliffe (2008: 14) states regarding PST, ‘if a particular institution has a prescribed set of project stages with decision points (stage gates), then the basic PST framework questions can be re-written to suit the declared delivery steps or stages for the institution’.

**Local Experiences of Space Users**

A number of examples of research can be found in the literature that examine the local experiences of space users. Such work investigates the relationships between spatial, material and sensory qualities and social and cultural factors, as these are manifest within particular (institutional) settings. For example, Melhuish (2011) uses ethnographic methods to investigate student and staff perceptions of spaces used for creative design education. In particular, Melhuish highlights perceptual relationships of symbolism (such as visibility, exclusivity and interface) and functionality (including flexibility, regulation and interactivity). Crook and Mitchell (2012), on the other hand, used structured
observations, on-the-spot interviews and focus groups to examine students’ experiences when using an area of a university library designed to support collaborative learning. Crook and Mitchell draw attention to the nuanced experience of ‘sociality’ that space users found valuable in the space – a variety of intermittent exchanges, serendipitous encounters and apparently solitary study occurring within an *ambiently sociable* setting, as well as the episodes of intense collaboration that the space had been explicitly designed to support.

Yet, few such examples of work in universities focus on the attendant opportunities for design. Thus, in this section, I examine work drawn from the museum sector, where links to space design are discussed explicitly. Ciolfi and Bannon (2005) document work undertaken in the Hunt Museum, which houses a collection of fine art and antiquities in Limerick, Ireland. The object of activity is that of ‘articulating the concept of *place* for design’ (Ciolfi and Bannon 2005: 223, added emphasis), based on an underlying motive to design new ‘technologically-enhanced physical spaces’ within the museum (Ciolfi and Bannon 2005: 221).

To examine *historicity* in this case, we must appreciate that Ciolfi and Bannon’s (2005) work is located in the tradition of *interaction design* (i.e. designing user experiences by applying the principles of human-computer interaction (HCI)). The process aims to build on work within HCI concerned with ‘the relationship between physical spaces and their inhabitants, on the connections between the properties of an environment and the patterns of action and behaviour occurring within them’ (Ciolfi and Bannon 2005: 219). One strand of this endeavour has involved augmenting the physical environment, using technology to introduce overlapping *layers* of information (Ciolfi and Bannon 2005: 218). Ciolfi and Bannon aim to gain better insight into designing augmented spaces by incorporating an understanding of *place*, derived from work in humanistic geography and its antecedents. The authors provide a potted history of work within this tradition and urge that we refrain from viewing space as merely a physical container (Ciolfi and Bannon 2005: 221–3). Instead, Ciolfi and Bannon wish to focus attention on the *design potential* accorded when material space is conceived as providing ‘raw materials’ underpinning *place*, a localised experience that can be articulated with appropriate support. It should be emphasised that the range of learning theories that implicate space do not universally concur about the centrality of the concept of place, and that this concept is not central to work such as that by Melhuish (2011) or Crook and Mitchell (2012). Ciolfi and Bannon’s particular discussion of the topic does, however, take what Bligh and Crook (in press) call an *associative* view of space and learning, where humans are assumed to engage in a cognitive process of place construction that relies, to some extent, on material resources.
Ciolfi and Bannon’s (2005) suggested process involves researchers observing the actions of visitors to the museum. A particular framework is used to guide interpretation and opportunities are taken to elicit visitors’ own verbal reactions. Two kinds of tools are important here. First, artefacts from the museum’s collections are used to mediate the experiences of the visitors being observed. The artefacts are selected (generally, those chosen are not prominently featured in existing museum exhibitions) and sited within the museum space so as to provoke reactions. Second, the researchers themselves use a conceptual, diagrammatic representation of place, understood as constituted by layers of cultural, social, personal and physical dimensions (Ciolfi and Bannon 2005: 224). The tool, which is based explicitly on the work of (humanistic geographer) Yi-Fu Tuan, is intended to provide ‘a visual articulation of the concept of place that highlights the different dimensions as interconnected aspects of the individual’s experience’ (Ciolfi and Bannon 2005: 224). The tool thereby functions as a why artefact (i.e. one used for the diagnosis and explanation of objects) (Engeström 2008: 129).

The source of contradiction in Ciolfi and Bannon’s (2005) work arises from the fact that place is a particularly troublesome object for design activity. The experience of place, while influenced by social factors, is understood as being unique to the individual. Ciolfi and Bannon (2005: 225) themselves recognise this when they state that place cannot be designed, but only designed for. While part of the benefit of the approach is to help users articulate their local experience of place, it is the role of a researcher to aggregate these experiences and combine them with analysis of secondary materials such as institutional policies (Ciolfi and Bannon 2005: 226). The task of compiling together a package of source material amenable for interaction designers is thus professionalised.

The mutual constitution of actions and activity here should also be understood in relation to the researchers, as opposed to the museum visitors. While Ciolfi and Bannon (2005: 227–9) go on to describe their designs for two new spaces within the Hunt Museum – the ‘Study Room’ and the ‘Room of Opinions’ – these seem to be provided as mere illustrations of principle. The design work itself is seen as producing a site-specific intervention [whose] rationale is deeply grounded in the fabric of the museum’ (Ciolfi and Bannon 2005: 226, original emphasis). Such an attitude stands in contrast to other examples, such as the work of Radcliffe (2008), discussed above, where it is suggested that the broader learning spaces community might reach consensus around particular designs. In examples of work that examine the local experiences of users, it seems that it is the tools and procedures that might be improved through experience, perhaps in tandem with the craft knowledge of the designer.
Institutional Processes and Spatial Implications

The work that I consider in this section involves instigating a structured investigation of processes (or ‘activities’) within an institution. Subsequent stages involve deciding for which processes the need for specific institutional support is compelling, and constructing appropriate representations of those processes to aid in planning decisions. Two outcomes are hoped for. First, that participants come to realize that not all processes need to be supported through the design of space (or even within the institution). Second, that those processes where material, institutional provision is required will benefit from better provision due to the insight afforded by the process specifications that are developed.

To illustrate these issues, I consider two examples of work whose scholarly motivations are quite different. The first example is provided by Boys (2011), who describes an activity where the object is to focus on improving the processes through which the university operates. The second example is taken from Quintana (2012), who discusses the use of HCI methods to represent the intended activity, context and audiences within a proposed space.

The historicity of these works is ostensibly quite different. Boys (2011) suggests that she wants to challenge two increasingly common assumptions: first, that spatial designs in educational institutions ‘represent’ the learning that occurs within them and, second, that better space design requires wider participation (i.e. the premise underpinning much work reviewed in this chapter). Boys’s concern is that relying on metaphorical representations of space invites those who are inexperienced in design matters (such as denizens) to make ‘common-sense’ design choices. Such choices often fail to take into account the ‘non-congruence and partial translation between intentions, representation in form, and lived experiences’ (Boys 2011: 101). Instead, Boys suggests that participants might more appropriately focus on what she calls the space of the teaching and learning relationship. By this is meant those activities occurring within institutional boundaries and the relationships between them, as well as ‘the sets of connections and disconnections that any participant has with all the activities of that institution’ (Boys 2011: 113).

Quintana (2012) establishes his historical point of departure from a more personal perspective. Quintana was an experienced HCI researcher and technology designer, yet with little background in architecture, who became involved in space design due to his senior faculty position. Tasked with contributing locally to the creation of a new building and recognising his own inexperience, Quintana opted to draw on his professional expertise in learner-centred design (Quintana 2012: 1). Like Boys, Quintana’s decision seems taken so as to avoid the misconceptions of ‘common-sense’. Quintana documents his experiences using a process space analysis approach, where the key task is...
to ‘understand and describe activity, along with the context in which that activity is situated and the audiences engaging in that activity’ (Quintana 2012: 2).¹

Quintana’s (2012) approach involves researchers working to create those tools that will later mediate discussions with denizens. First, the researchers construct ‘educational activity descriptions’ that try to articulate ‘the full set of roles, activities, artifacts, information objects and services’ being envisioned for the new building (Quintana 2012: 2). Second, the researchers work up some of these activity descriptions into prose form as current scenarios, detailing how users might currently engage in a particular activity, including ‘the problems, complexities, and successes that arose for students in the current spaces’ (Quintana 2012: 2). Third, a separate set of future scenarios is constructed. These describe ‘how students might engage in the same kind of activity in the new spaces we were designing, which forced us to think about how we could create the new spaces to address the problems’ (Quintana 2012: 2, original emphasis). These current and future scenarios are then used to ‘tell a set of stories about the emerging Brandon Centre vision to the other stakeholders in the building’ (Quintana 2012: 2). Denizens can engage with these stories, and revise or add to them before they are turned over to the professional design team.

Boys (2011) describes the use of simpler tools. Determined that ‘shared consensus’ should not be required in order to proceed, Boys describes work that begins by examining the official institutional description of particular processes. In the example that Boys discusses, this documentation concerns student enrolment (Boys 2011: 114). Participants subsequently use simple artefacts to examine these processes:

one activity involved passing round a piece of paper to act out what a student needed to do in order to enrol at the university. At one stage, the paper went backwards and forwards between two participants, due to uncertainty about what should be the next stage in the process . . . which powerfully showed the process’s underlying problems.  

(Boys 2011: 115)

Both of these process-focused approaches quite directly involve the mutual constitution of actions and activity. Boys (2011: 114–15) discusses how analysis can serve to redefine the boundaries of processes while also providing direct insight into spatial implications:

Such an approach was able to re-think social and spatial practices simultaneously so that, for example, a one-stop shop (literally like a shop-front, centrally located and easily accessible on the university campus) was
Quintana (2012: 3) describes how discussion involved linking the particular scenario narratives with 'budgets and timelines that had to be met, and the prioritisation decisions that come with such a project', describing this as a 'learning experience' for participants.

Two main contradictions are evident here. The first closely mirrors that discussed previously in relation to consensus approaches (i.e. that certain spatial repertoires have become established for good reasons and that innovation, while desirable, carries a degree of risk). Quintana (2012: 2) notes that considering future scenarios ‘forced us to think about how we could create the new spaces to address the problems and issues in the existing scenarios without losing some of the favorable aspects’. Boys (2011: 115) argues that a main aim of the method she describes is to ‘reveal gaps in, and unintended consequences of, existing social and spatial practices’.

The second attendant contradiction is discussed at more length in both examples. The tension is that technological developments are serving to render obsolete a range of services hitherto provided by institutions on their campuses. Their replacement by institutional Web services may be appropriate, but, in other cases, the institution may divest altogether. Boys (2011: 116–17) cites an illustrative example of work concerning university library services. Here, the process re-engineering approach examined appropriate scales of services and distinguished between those at institutional and sub-institutional scales. For example, some provision for information searching was deemed obsolete due to developments in online search engines such as Google, while other services, such as catalogue databases, could be placed online but still required institutional support. Rare book collections, on the other hand, were seen as presenting particular space requirements, as well as requiring skilled institutional curation. Quintana (2012: 3) discusses similar issues in relation to a library video database.

**Design Briefs**

The approaches described thus far have only implicitly addressed the issue of constructing design briefs. It has been assumed that writing briefs will remain a professionalised activity, thereby perpetuating a separation between ‘creative’ consultation and more ‘concrete’ decision-making undertaken later within the auspices of estates management processes. This assumption is, perhaps, understandable – as a response to denizens’ typical lack of experience in spatial
design (or comprehension of spatial theories). Yet, as I will elaborate more fully in the conclusion, separating participants from concrete, consequential decision-making is a significant problem from the vantage point of activity theory. As a consequence, I want to focus on a particular example of work by Sherringham and Stewart (2011) that does involve denizens constructing briefs, notwithstanding that such work is rather rare in the literature. Within the school-design literature, Woolner (2010) also provides a description of how young pupils can contribute to briefs by ‘diamond ranking’ designs, or by developing their own through drawing. I do not consider Woolner’s account in great detail, however, because her extensive accounting for primary-age cognitive abilities renders much of her discussion tangential to current purposes.

The activity described by Sherringham and Stewart (2011) is straightforwardly oriented towards the brief:

A design brief is a crucial document, crystalizing and communicating stakeholder desires for the outcome of a building program. [Thus, the] aim of the research project was to design tools, models and other supports for enabling a collaborative and participatory brief development process.

(Sherringham and Stewart 2011: 106)

Sherringham and Stewart suggest that one of their underlying motives is to move away from replicating familiar spatial models towards producing more ‘innovative and appropriate design briefs’ (Sherringham and Stewart 2011: 111–12, added emphasis).

The particular historicity of Sherringham and Stewart’s (2011: 108–9) work arises from a scathing assessment of the Enlightenment concept of bildung; this concept, they suggest, remains manifest in how university spaces typically seek to draw attention away from the physical environment. Thereby, such spaces ‘support a focussed, disembodied attention to the information being imparted by the teacher [allowing] the mind to be engaged and the body to be neutralised’ (Sherringham and Stewart 2011: 109).

Sherringham and Stewart use practice theory (that of Bourdieu) to establish that neutralising the body in this way means not supporting ‘authentic learning’ (Sherringham and Stewart 2011: 106). It is noted that students can identify incongruities between educational space provision and their own practice, yet it is observed that unaided conversations can become overly focused on function. In other words, the underlying contradiction is that interviewees can identify what does not work, but are unable to articulate how institutional spaces fail to evoke the proper disposition or mood for their practice.

To overcome this problem, Sherringham and Stewart (2011) suggest the concept of activity-scapes as a focus for discussion, an abstraction comparable
to Boys’ (2011) *space of the teaching and learning relationship* above. An activity-scape is defined as ‘the supportive experiential, spatial, equipmental and service environment immediate to the performance of a particular activity’ (Sherringham and Stewart 2011: 113).

Sherringham and Stewart (2011: 112–14) suggest that a number of tools might ‘scaffold’ attendant discussion. First, the concept of activity-scape itself is used to guide and direct the discussion; participants are asked to explore five ‘dimensions’ of the activity-scape (relating to orientations, aids, tools, support and boundary conditions). Second, a set of visual tools serve as ‘triggers or conversation pieces [providing] a non-linguistic way of developing generative narratives and interpretable artefacts’ (Sherringham and Stewart 2011: 112).

These visual tools are used in participatory and *playful* engagements, intended to ‘defuse’ power relations between players, and help participants access tacit knowledge within a risk-free atmosphere. Sherringham and Stewart (2011) describe their workshops as divided into two phases. Phase 1 involves working collaboratively to formulate an appropriate learning activity-scape, constructing a representation from an array of cards that provide ‘multiple options for identifying various needs, supports or conditions for learning’ in a range of representational forms, from ‘fairly abstract visual prompts to explicit words and cues’ (Sherringham and Stewart 2011: 114). Phase 2 involves testing and iteratively developing this activity-scape:

> A set of ‘what if?’ cards introduces possible shifts in the context for learning, including broader changes to the physical, technological, social, political and economic environment of the educational institution. The activity-scape is also tested against both present and future institutional identity and industry expectations. In this way, the workshops are modelled to create a form of reciprocal learning, within which stakeholders and designers engage in playfully framed exchanges.

(Sherringham and Stewart 2011: 114–15)

Sherringham and Stewart’s work contains a strong sense of the *mutual constitution of actions and activity*. This arises from the relationship between the testing and reciprocal learning, described above, and the overarching focus on ‘authentic learning’. This authentic learning is understood to occur ‘when the learning scenario experienced by the student reflects contexts for action typical of those for which the student is being prepared’ (Sherringham and Stewart 2011: 106). Thus, participants are being asked to think about the relationships between the envisaged spaces and the ways in which the student will eventually interact with the world after leaving the education system. What Sherringham and Stewart discuss insufficiently, in my view, is whether these ‘contexts for action’ are to be conceptualised as relating to students’ later ability
to participate within a democratic society, or whether the focus is on narrower concerns of vocational preparedness.

**Academic Value in Institutional Identity**

In this section, I consider two related examples of work whose object is the reshaping of institutional identity, so as to support the construction of universities that reflect academic values. The first is the ‘Learning Landscapes’ work of Neary et al. (2010), while the second is the subsequent ‘E4V Model’ presented by Duggan (2011). Each example aims to harness a ‘silent revolution’ apparently already in progress within higher education, whereby the landscape is being altered by a combination of technological and societal factors that are manifest within institutions via the demands of staff and students (Neary et al. 2010: 10). The common aim is to harness this revolution, empowering academics and others to engage with and influence institutional vision.

Neary et al. (2010) take as their historical starting point the three-year research programme of the UK Higher Education Space Management Group (SMG) that began in 2006. Initially motivated by concern about space utilisation rates in higher education, the SMG’s work expanded to include investigations of space management and innovative practice (Neary et al. 2010: 8). Within this context, Neary et al. (2010) identify a ‘need to develop a better understanding of the relationship between academics and estates in the leadership, governance and management of space in universities’ – in particular, a better understanding that takes into account those good practices associated with innovative spaces. The concept of learning landscapes is used to describe holistic, multidimensional thinking about campuses as learning spaces (Neary et al. 2010: 10). Duggan (2011: 147) starts from the more particular observation that (institutional) conversations about space are ‘increasingly dominated by spreadsheet generated data’, a problem exacerbated when space is perceived as in short supply. She suggests that ‘the answer lies with key stakeholder groups who are empowered to collectively explore how the space of their university, college or other educational provision is described, designed, allocated, managed and evaluated’.

Neary et al. (2010) examine institutional identity, stating a desire to increase the influence of academic values over that identity. In part, it is suggested that academics should use discussion of learning spaces as a mechanism for reasserting academic values over the institution. Those academic values need to be underpinned, it is argued, by a research attitude to campus space, recourse to insight from academic disciplines when engaging in design, and an emphasis on the academic tradition when engaging in inter-professional collaboration. Duggan (2011: 148–9) emphasises the different values that stakeholders will bring to discussions concerning space. It is Duggan’s hope that:
through an ongoing process of sharing perspectives, agreeing values and moving towards collective *sense-making*, conversations about physical space can become increasingly open and hopeful, no longer so focused on the limitations of scarce space, but rather on ways in which its full potential can be realised.

(Duggan 2011: 147, original emphasis)

Both examples of work document tools intended to support this sharing of perspectives; indeed, Neary *et al.* (2010) proffer five such tools. Four of these five are research-derived frameworks, provided in the form of brief documents used to support stakeholders’ thinking and collaborative discussions. *Teaching with space in mind*, for example, aims to stimulate the spatial imagination of academics with regard to their own pedagogy, so as to support the specification of *educational briefs* for learning space projects (Neary *et al.* 2010: 35). Similarly, *pragmatics of place* provides a guide for estates professionals when they communicate about learning spaces with academics (Neary *et al.* 2010: 36), *talking our futures into being* supports inter-professional exploration of the university’s role as a *client* when commissioning spaces (Neary *et al.* 2010: 37), and *the idea of the university* supports ‘a fundamental discussion about the nature and role of the university’ (Neary *et al.* 2010: 38) based on a summary of historical ideal-types.

The fifth of the tools set out by Neary *et al.* (2010: 33–4) is the *campus mapping profile*. This is a visual template whose content is ‘filled in’ during *in situ* analysis of institutional campus provision. It is envisaged that the completed tool provides a visual overview of how the campus estate fulfils institutional vision, and helps to establish where there are ‘gaps’ in provision. To do so, a matrix of criteria is provided. These criteria are divided into three categories, which are suggested to comprise fundamental qualities of good design: *expression, efficiency* and *effectiveness* (Neary *et al.* 2010: 18–19).

The later E4V model proposed by Duggan (2011) elaborates these three categories along with a fourth. The E4V model is constructed to support discussion of the *efficient, effective, expressive* and *enduring* qualities of space (Duggan 2011: 149). Aided by a representation of these four qualities, inter-professional groups are asked to articulate what value they ascribe for each of these elements. Thus, suggests Duggan, ‘as the priorities of each stakeholder group become clearer, a collective set of priorities starts to emerge. This . . . enriches the range of issues included when discussing space needs’ (Duggan 2011: 150).

In different ways, these tools mutually constitute actions and activity by locating particular, spatially focussed discussions within their institutional context and then opening up that context to the possibility of critique. Neary *et al.*’s (2010) *campus mapping profile*, for example, suggests that participants
focus their attention on those aspects of spatial provision whose current provision most fails to realise the stated institutional vision; then the idea of the university examines the institution itself, inviting academic engagement with that vision.

Duggan’s (2011) exposition of the E4V model deals more explicitly with the issue of how such mutual constitution might occur within particular discussions. Deploying an argument that parallels work on consensus-building as the object of the activity, above, Duggan (2011: 150) suggests that discussants are most likely to agree about conceptions of future-oriented visions, such as long-term views of education. For Duggan, by establishing early common ground regarding these general perspectives, it is hoped to buttress later discussions when more granular, divisive issues arise. It is suggested, for example, that particular discussants might be prepared to move from their original negotiating positions once they understand what others need in order to achieve those wider objectives that served as vehicles for earlier consensus.

This issue of consensus is a source of contradiction. While it is trivially obvious that attaining such consensus may be difficult in practice, it is also dubious whether this is a desirable outcome in principle. Duggan (2011: 148) suggests that systemic tensions between different views of institutional space are exacerbated when such space is seen as scarce. Yet, quite correctly, elements of the E4V model serve to draw attention towards this scarcity, such as when highlighting the concept of efficiency in space design. Neary et al. (2010: 35) explicitly recognise the need to recognise what they term ‘Diversity, Difference and Dissensus’. It seems implied that striving for consensus is likely to produce either groupthink, insincere acquiescence or to be simply fruitless. I suggest that participating denizens might usefully spend time clarifying the nature of their dissensus; the work discussed in this section suggests useful mechanisms for locating the attendant expressions of opinion in their institutional context, and for better understanding and reshaping this institutional context as a product of academic traditions and activity.

**Concluding Comments**

The learning spaces literature commonly incites academics, students and others to become more involved in designing and creating spaces within universities. This chapter has conceptualised these people as denizens, a term intended to convey that their insight derives from their experiences inhabiting particular spaces rather than from theoretical or procedural expertise, and to call attention to their partial enfranchisement vis-à-vis institutional estates processes. Subsequently, a range of new methods from the learning spaces literature have
been examined using the concept of distributed agency. Table 3.1 provides a summary of the issues that were uncovered by these analyses. Established institutional norms serve to constrain the ways in which denizens can contribute to the design of university spaces. Indeed, the opportunity for denizens to participate at all is frequently determined, strategically, by high-level committees. Leighton and Weber (1999), for example, provide an overview of the set of committees usually involved in the US, while Lewis (2010) discusses the strategic partnerships involved within a high-profile UK project. Furthermore, those denizens that do take up the opportunity to participate in ‘faculty committees’, ‘design teams’ or ‘strategic partnerships’ seem set-up to express parochial concerns, notwithstanding their own actual priorities, by the remit they are given and by the limited period of their involvement. In this chapter, I have drawn attention to examples of work that seek to ameliorate this situation.

Nonetheless, I suggest that one common (though not universal) limitation of attempts in the learning spaces literature to incubate distributed agency is that what is proposed are bounded activities that draw in denizens only in relation to particular projects. In other contexts, such as the design and production of new technologies, or in leisure industries, new kinds of collective agency are being enabled by forms of social production that transcend the limitations of more conventional institutional hierarchies and internal markets. It will not be possible here to sketch out detailed plans for such social production of spaces within particular institutions. Indeed, I suggest that this should become a focus of subsequent research. But I do wish to conclude the chapter by pointing out some elements of social production that are currently lacking.

Engeström (2008:196) uses the term knotworking to frame social production. The term describes a longitudinal process without a particular endpoint where the object of activity is repeatedly co-configured, and a variety of relationships (knots) are negotiated, formed and dissolved. Knotworking needs to be distinguished clearly from networks (i.e. webs of links between organisational units that become stable over time) (Engeström 2008: 208). Crucially, networks support the co-ordination of work and emphasise the designated roles of particular people, while knotworking involves cooperation centred upon tasks, and self-reflective communication (Engeström 2008: 197). Engeström identifies a range of features associated with knotworking and social production, and here I examine the most obvious gaps that exist between these features and how learning spaces are currently created within institutions.

Social production, suggests Engeström (2008), involves peer review and negotiation as a coordinating mechanism, in place of a central ‘broker’. Furthermore, knotworking involves critiquing and negating existing wisdom
<table>
<thead>
<tr>
<th>Object-orientation</th>
<th>Historicity</th>
<th>Tool mediation</th>
<th>Mutual constitution of actions and activity</th>
<th>Contradictions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consensus and ownership.</strong></td>
<td>Desire for greater user input into design processes seen as dominated by architectural and operational considerations.</td>
<td>Trigger questions and flow diagram.</td>
<td>Focus on developing a vision and then communicating it to those developing the design brief.</td>
<td>Institutions are driven to produce innovative spaces by market forces and a desire to adapt to new forms of learning; yet, unorthodox spaces are at risk of being perceived negatively (and provoking complaint).</td>
</tr>
<tr>
<td><strong>Desired outcome: attaining stakeholder buy-in for unorthodox, flagship spaces.</strong></td>
<td>Stakeholder 'buy-in': to gain acceptance of unorthodox spaces and to incubate new ideas within the institution.</td>
<td>Invite discourse about a space’s life cycle stages and what relationships between space, technology and learning are proposed. Tools broaden access to design conversations and create persistent documentation.</td>
<td>Think critically about who is to develop the brief.</td>
<td>Desire to build a capacity to experiment.</td>
</tr>
<tr>
<td><strong>Local experiences of space users.</strong></td>
<td>Environment seen as 'raw materials' for human experience; need to investigate relations between environment and inhabitants.</td>
<td>Diagrammatic representation of a space model to guide interpretations of field observers.</td>
<td>Focus on understanding localised experiences and developing site-specific interventions.</td>
<td>Experiences are unique to the individual and thus problematic for designers.</td>
</tr>
<tr>
<td><strong>Desired outcome: articulating local experience to inform local design.</strong></td>
<td>Desire to maximise design potential through subtle insight.</td>
<td>Actual spaces and in situ artefacts used to mediate the experience of the users who are observed.</td>
<td>Gain experience for designers and iterate the methods themselves.</td>
<td>'Place' cannot be designed, but only designed for.</td>
</tr>
<tr>
<td><strong>Institutional processes and spatial implications.</strong></td>
<td>Desire to map out institutional processes in detail to understand their influence.</td>
<td>Embodied mapping of processes (e.g. moving physical artefacts to analyse processes and examine their current boundaries).</td>
<td>Analyse processes and examine their current boundaries.</td>
<td>Changing processes in response to demand or technology will reshape.</td>
</tr>
<tr>
<td>Desired outcome: improving processes and mapping changing space requirements.</td>
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<tr>
<td>Perceived need to side-step the limitations of participants’ ‘common-sense’ understanding of spatiality.</td>
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<tr>
<td>Represent the ‘flow’ of a process.</td>
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<tr>
<td>Producing written scenarios (both current and future) to stimulate discussion around processual change.</td>
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<tr>
<td>Link stories with timelines, decisions about priorities, and different scales of services provided within or outside the institution.</td>
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<tr>
<td>There is a tension between being responsive to process users while positioning some provision online or outside institutional provision.</td>
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</tbody>
</table>

**Design briefs.**

- **Desired outcome:** directly embedding experience of authentic learning into design.
- **Reaction against perceived historical separation of mind and body in space design.**

**Visual tools (e.g. conceptual ‘what if’ cards, images of learning spaces) to support playful engagement.**

**Consider the relations of spaces to practices of authentic learning and so trigger wider speculation about how the practices learnt prepare students for their subsequent life.**

**Denizens can identify what does not work (i.e. instances where current spaces fail to support authentic practice) but are frequently unable to articulate alternatives for design.**

**Academic value in institutional identity.**

- **Desired outcome:** critiquing the dialectical relationship between space provision, academic value and institutional identity.

- **Position spatial provision as realising institutional identity, rather than as (quantitatively) fulfilling user demands.**

**Research-derived frameworks designed to support inter-professional dialogue and reflection by particular stakeholders (e.g. academics).**

**Locate spatial analysis within wider institutional vision statements.**

**Critique the identity of the institution itself and open up the possibility of reimagining how it is realised through campus provision.**

**Consensus around high-level visions of institutional mission may not lead to agreement about spatial provision.**

**Empower stakeholders to exert agency over the institution, including institutional identity and space management.**

**Tools for *in situ* analysis of campus provision and for synthesis of disparate data.**

**Informed dissensus is valuable and should be documented.**
and authority. There are no explicit membership criteria, but instead members can be ‘identified by their activism’ (Engeström 2008: 229). Institutional space production, on the other hand, typically involves a hierarchy of committees that each act as brokers for those at lower levels (Leighton and Weber 1999). The extent and form of denizens’ participation is carefully managed. Notwithstanding that the insight of denizens is relevant because they inhabit particular spaces, their professional roles often determine what interest they are assumed to have in ongoing processes. For example, Bickford’s (2002) discussion of estates ‘design teams’ assumes that stakeholders will have little inclination to participate beyond articulating their existing professional concerns. Estates departments act as particular brokers because of their ongoing responsibilities and expertise. For peer review and negotiation to regulate learning space creation, I suggest that more direct relationships will be required between the various denizens, between denizens and architects, and across the boundaries of estates departments. Rather than each participant focusing on their own fragment of the object, knotworking involves constant negotiation and rapid integration of expertise. It involves the construction of a negotiated order that allows different participants to pursue their intersecting activities. The range of different plans, including specific pedagogical briefs (Neuman 2003), being recommended in both the estates management and the learning spaces literature, seem to provide one platform for less inhibited, intersecting avenues of development to be pursued.

Importantly for social production, a range of particular, bounded activity systems operate within a wider ‘substrate’ that develops over a lengthy period of time. Engeström (2008: 228) uses the term mycorrhizae to describe this substrate, by analogy with fungal biology. The point is that a fungus is essentially an underground organism, potentially very large, that forms long-term symbiotic associations with other plants; the mushrooms that are visible above ground are merely reproductive structures activated under particular conditions (Engeström 2008: 228). Similarly, knotworking involves an element of ‘latent organisation’, an expanding bundle of developing connections within a durable structure that may nonetheless remain apparently dormant for periods of time until being activated.

By this analogy, the particular activities that I examine in this chapter would serve as mushrooms (i.e. definite structures pertinent to particular conditions). Such activities can serve as ‘bridgeheads’ for the underlying substrate; if they do not come to be formed, then it will eventually wither and die. But if such structures are not themselves supported by an underlying, latent organisation, then their very compartmentalisation is a significant obstacle.

I suggest that this mycorrhiza-like structure is lacking in relation to the topic of learning spaces in an overwhelming majority of institutions. Such a situation stands in contrast to those substrates that have developed to support other areas
of common inquiry, such as the use of technology to support learning, where significant work often occurs across numerous sub-communities. A mycorrhiza structure for learning spaces would *generate* particular activities as appropriate – perhaps related to institutional values, the support of processes, the creation of design briefs and the understanding of user experiences. It might also perhaps undertake collective political lobbying in favour of particular projects. Within the structure, it would not be necessary for *everyone* to collaborate with *everyone else*; instead, different hubs of activity would emerge for periods of time, connected to other hubs and particular people by ongoing, negotiated relationships (Engeström 2008: 212).

It should be clear from this description that social production would involve people changing and developing through their involvement. Existing procedural norms assume that this is unlikely, and thus focus on constrained participation based on existing, professionalised interests; for a list of such assumed ‘interests’, see Bickford (2002: 47). I suggest that such an assumption needs to be challenged and the associated structures overcome in practice. Furthermore, social production would involve change not merely of people, but also of the object of collective activity. In social production, as ongoing developments in the mycorrhiza create tools and organisations that generate unintended consequences, so it becomes necessary for the object to be iteratively renegotiated. The result is a *runaway object* of activity (Engeström 2008: 202). At present, particular infrastructures of planning are constructed in particular project *programming* phases (Lauber 2003); here, again, social production poses a distinct challenge to the *status quo*.

Moving to a social production model would also challenge the boundaries that underpin existing infrastructures. I have already mentioned the desirability of enabling new relationships across particular boundaries, such as those of estates departments, but it needs to be understood that social production invites trajectories of working that pass across the boundaries of institutions themselves. This would involve cooperation and self-reflective communication between individuals in different institutions. Such a situation would invite significant and useful contributions from the nascent academic community investigating the issue of learning spaces, of which this book serves as one particular outlet.

**Note**

1 To avoid confusion with the use of terms elsewhere in this chapter, it should be emphasised that Quintana (2012) defines a number of concepts within *process space analysis* (such as *activity, artifacts* and *objects*) in ways that are not synonymous with how the same terms are understood within activity theory. Indeed, Quintana explicitly acknowledges that he is not adhering to activity theory definitions (p. 2).
References


(eds), Learning Spaces in Higher Education: Positive Outcomes by Design, St. Lucia: University of Queensland, pp. 9–16.


