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A semi-systematic review of the organizational space literature on built environment

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Abstract

The present report examines the academic literature on 'organizational space,' which addresses the built dimensions of organizations. The review has both descriptive and analytical components. The aim was two-folded, first to describe the theoretical perspectives, methodological approaches, and empirical findings of a core sample of publications. Second, to scrutinize how the built environment is used to manage organizations. The findings of empirical studies are analyzed through a structure-agency lens that is identified as a central debate in the field, and the final discussion emphasizes how future research may benefit from establishing what is managed, how it is managed, and who is managing it when studying the role of the built environment in management and organization.

Preface

This report presents a study conducted in the project “The materialization of changes - how built spaces drive, prevent and modify organizational changes”, funded by FORTE (Swedish Research Council for Health, Working Life, and Welfare) and hosted by the School of Public Administration at the University of Gothenburg. The project analyses the influence of changes in the built environment on management, organizational culture, and professional work at the University Hospitals in Solna and in Umeå, as well as in several prisons in Sweden. The project is led by Livia Johannesson, associate professor in Public Administration and researcher at Score and is funded by FORTE. The present report has been conducted by Johan Sandén, PhD and post-doctoral researcher in the project.

This study examines a distinct stream of research on organizing, organizations, and their built environment, called “organizational space”. The report can be read as an introduction to the field, and as a help to explore the relationship between materiality and organizations: how do built environments structure organizations, and conversely, how do organizations, and individuals in organizations, structure the built environment they exist in?

The author wishes to thank FORTE for supporting the present research, Livia Johannesson and Carl Yngfalk, the editors for the Score report series for invaluable feedback on the study, and participants at the Score working seminar that engaged in commenting and discussing the study, thereby pushing the work forward.

Stockholm, October 2024
Johan Sandén

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Introduction

The built environment has long been a tool for control, communication, and organization (Taylor 1911; Mayo 1933; Foucault 1977; Lasswell 1979), and is of constant and great relevance to organizing, as organizations always 'take space' somewhere (Chan et al. 2019). In particular, organizations that are engaged with human services depend on the specific location and building where their organization resides, as human services often need specific tools and are characterized by face-to-face interactions with citizens, customers, and clients (Lipsky 1980; Hasenfeld 1983). However, a stream of research under the label "organizational space" claims that the built environment has been understudied in organizational research. This stream thus emphasizes a spatial turn in organization studies and aims to renew and pursue this forgotten spatial dimension in organizational analysis (Taylor & Spicer 2007; van Marrewijk & Yanow 2010; Weinfurtner & Seidl 2019; Stephenson et al 2020; Blomberg & Kallio 2022). To motivate the spatial turn in organization studies, van Marrewijk & Yanow (2010) argue that the built environment has been neglected theoretically, methodologically, and empirically.

Overall, the two-fold aim of this review is first to map central theories and methods in organizational space research on built environments by examining a selection of core publications. Second, I aimed to analyze how the built environment is used for management and by the users of organizational spaces.

In correspondence with the first part of the aim, I lay out the theoretical and methodological approaches used in central organizational space research. I present the spatial concepts used, how buildings are used for communication, and identify a structure – agency debate as central to the field. Regarding methods, it is argued that researchers have had difficulties grasping and representing the material in organizational analysis (Yanow, 2010). Therefore, I map different techniques that scholars have used to grasp the meaning and practices of the built environment in organizational space studies.

For the second part, I use published empirical studies to analyze how organizations are managed through their built environment and how organizational members inhabit their workspaces. The literature covers both top-down and bottom-up perspectives on the built environment as it grasps the perspective of planners, managers, and architects in using built environments to achieve organizational goals, as well as looking at how users of the built environment (which may include managers at different levels but mainly refers to workers and professionals) settle and dwell in organizational spaces. Here, I turn back to the structure-agency debate in the literature to discuss agency between different organizational spaces. The review ends with suggestions on aspects to look at for scholars who would like to delve further into management by the built environment.

The review is laid out as follows. First, I present how I approached the review task, what kind of review I did, and how I identified relevant publications and analyzed them. Second, I describe central theoretical concepts and perspectives on space, highlight the structure-agency debate that I have identified, and describe how the built environment can steer through communicative

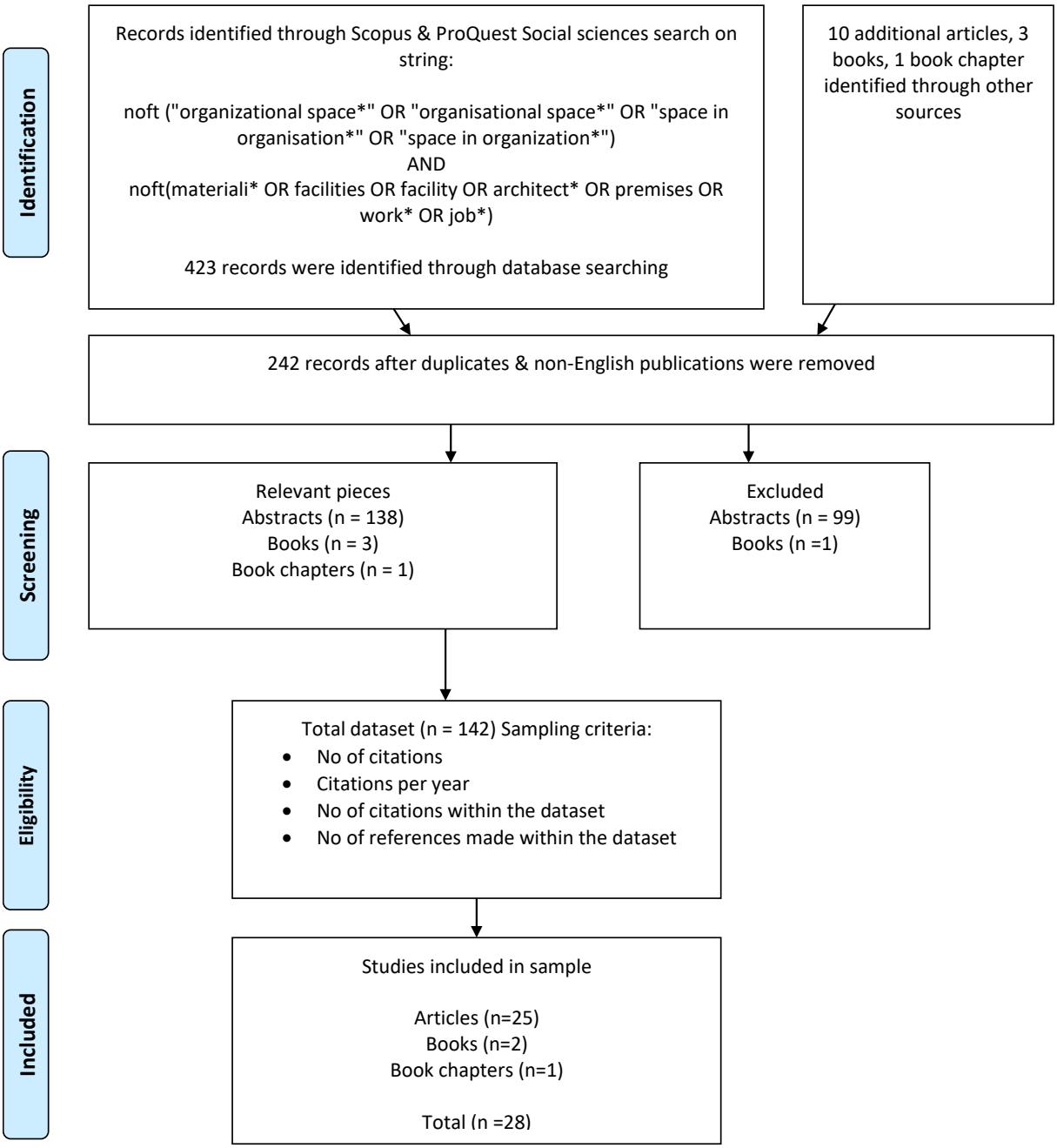
means. Third, methodological approaches and challenges in the literature are described. Fourth, findings from empirical studies on the built environment and organizational spaces are presented in the categories of closed, semi-closed, and open spaces. Finally, I end the review with a discussion of the presented findings.

Review Approach: a semi-systematic review

Literature reviews can be conducted in various ways (Snyder 2019; Aguinis et al. 2023). The present review task was approached through what can be labeled a structured (Funck & Karlsson 2023) or semi-systematic (Snyder 2019) literature review. This approach combines elements of a fully systematic search with flexibility, which is suitable when the addressed topic is vague or difficult to define precisely (Snyder 2019; Funck & Karlsson 2023). The organizational space literature is such a vague topic. Research on organizational space is difficult to aggregate because of the terms used to describe objects of analysis: buildings, workplace, space, place, architecture, premises, location, etc. (Taylor & Spicer 2007). But also because space itself can mean so many different things (Weinfurtner & Seidl 2019).

The literature on organizational space is not clearly defined or delimited for at least three reasons. First, the terms “organizational” and “space” are used in numerous writings without conceptualizing these terms further or address the research on organizations or space, so publications that use those terms are out of the scope for this review. Second, research on the built environments of organizations has been conducted in various research traditions that do not necessarily speak to each other. Third, the concept of ‘organizational space’ does not itself delimit to the built environment, which is the focus of this review. This means that publications addressing buildings or physical surroundings must be carved out. This process was inspired by the PRISMA model (Moher et al. 2009) and is presented in figure 1 below, while each step is explained in more detail in the following sections.

Figure 1. Flow chart of search process (based on Moher et al. 2009)



Step one: Identification

The ProQuest Social Sciences and Scopus databases were used to find relevant datasets of articles. While Scopus covers natural, technical, and social sciences, as well as the humanities, ProQuest Social Sciences includes more journals within social sciences and delimits from other broad categories of academic disciplines.

A search string is required to search these databases. A string is a combination of keywords and commands that can condition a search in various ways. The terminology used in searching for relevant publications in the organizational space literature is as previously mentioned, unclear because many different terms are used, and irrelevant publications may use the same terms.

When referring to the built environment, publications may use different terms such as facilities, premises, and architecture. In addition, the terms 'space' and 'organization' are universally used. After trying various keywords and combinations, the final search string used was:

noft[1]("organizational space" OR "organisational space*" OR "space in organisation*" OR "space in organization*")*

AND

noft(materiali OR facilities OR facility OR architect* OR premises OR work* OR job*)*

Noft is short for "not in full text," meaning that the search covers the title and abstract of publications, not the entire article text, as that would produce an unmanageable quantity of records. Some variation on the concept of 'Organizational space' was a necessary condition for a publication to be recorded[2], and the publication also had to cover a variant on either materiality, facilities, architecture, premises, or work in their title or abstract, as these terms produced the most accurate hits. This resulted in 195 English-language hits in Scopus and 228 hits in ProQuest Social Sciences (total = 423).

I identified additional records using supplementary techniques. Books were not included in the search, but a few studies were identified through citation tracing. "The spaces of organisation & the organisation of space: power, identity & materiality at work" by Dale & Burell (2008), "The spatial construction of organization" by Hernes (2004), and the volume "Organizational spaces: rematerializing the workaday world" edited by van Marrewijk & Yanow (2010) were well-referenced books which addressed the topic of this review and were followingly included at this stage. I also included a particularly relevant book chapter by Middleton et al. (2020), covering space as a mediator between the macro- and micro-levels. Back- and forward tracing of citations in combination with recommendations by colleagues produced seven additional publications to the set. I also mapped and traced citation patterns using Publish or Perish[3] and Local Citation Network[4], which identified three additional publications not covered by the search string or previous citation tracing. The resulting set of publications included 437 records. After removing duplicates and non-English publications, the dataset consisted of 242 records.

Step two: Screening

The set of publications was then prepared through a screening and exclusion process. The 242 records did not belong to the literature on organizational space, despite the thorough search process. This was due to the terminological confusion mentioned earlier – the terms' organization and space are not unique to the literature addressed. Publications that were not relevant were identified by screening abstracts and then removed from the set (99 journal articles and one book). Non-relevant publications were excluded drawing on van Marrewijk &

[2] 'Spatial organization' was removed from the string as it only produced hits in natural sciences.
[3] https://harzing.com/resources/publish-or-perish
[4] https://localcitationnetwork.github.io/, based on OpenAlex, a global catalogue for research https://docs.openalex.org/

Yanow's (2010) definition of space (also like Stephenson et al 2020), where organizational space is a built environment and a "work-related setting" - this delimits from space as merely a theoretical metaphor. Records that did not address the organizational space in this sense or the built environment were excluded. However, studies on virtual spaces were included if they were linked to the built environment, for example, by addressing hybrid work at multiple locations (Petani & Mengis 2023). A total of 100 records were excluded through this screening, resulting in a set of 142 publications.

Step three: Eligibility

A sample was selected for further analysis based on the eligibility criteria of centrality and diversity. To operationalize centrality, the following measures were used:

- No of citations
- Citations per year (to prioritize more recent publications of importance)
- No of citations within the dataset (local citation frequency)
- No of references made within the dataset (local referencing to prioritize even more recent research of importance)

These measures were found through citation analysis using Zotero, Publish or Perish, Local Citation network, and Google Scholar. The diversity criterion was operationalized as representation of the sub-streams of research. Through citation mapping in Local Citation Network, the relationships between records in the set were mapped to identify clusters of publications in the dataset. Through citation analysis, records were grouped into clusters that referenced each other and shared the same key references. To pursue the diversity criteria, I ensured that various clusters within the literature on organizational space were represented in the selection, as papers from each cluster were included in the sample.

Step four: Inclusion

The selected articles are presented in table 1. The selection was dependent on threshold values for the number of citations, which reflected natural breaks in the data.

Table 1. Twenty-five selected articles (Information was retrieved from "Local citation network," expect information marked by an asterisk (*) which is retrieved from "Publish or Perish"), two asterisks (**) indicates that the citation information comes from Google scholar.

Citations	Citations per year	Authors	Title	Year	Source
294	17.29	Taylor & Spicer	Time for space: A narrative review of research on organizational spaces	2007	International Journal of Management Reviews
249	20.75	Beyes & Steyaert	Spacing organization: Non-representational theory and performing organizational space	2012	Organization
203	10.68	Halford	Hybrid workspace: Re-spatialisations of work, organisation and management	2005	New Technology, Work and Employment
183	13.07	Tyler & Cohen	Spaces that matter: Gender performativity and organizational space	2010	Organization Studies
156	17.33	Shortt	Liminality, space and the importance of 'transitory dwelling places' at work	2015	Human Relations
124	4.96	Mouritsen	The flexible firm: Strategies for a subcontractor's management control	1999	Accounting, Organizations and Society
94	9.40	De Vaujany & Vaast	If these walls could talk: The mutual construction of organizational space and legitimacy	2014	Organization Science
89	9.89	Wasserman & Frenkel	Spatial Work in Between Glass Ceilings and Glass Walls: Gender-Class Intersectionality and Organizational Aesthetics	2015	Organization Studies
57	5.70	Zhang & Spicer	'Leader, you first': The everyday production of hierarchical space in a Chinese bureaucracy	2014	Human Relations
52	4.73	Munro & Jordan	'Living Space' at the Edinburgh Festival Fringe: Spatial tactics and the politics of smooth space	2013	Human Relations

47	11.75	Stephenson, Kuismin, Putnam, Sivunen	Process studies of organizational space	2020	Academy of Management Annals
40	10.00	Nash	Performing Place: A Rhythmanalysis of the City of London	2020	Organization Studies
33	6.60	Best & Hindmarsh	Embodied spatial practices and everyday organization: The work of tour guides and their audiences	2019	Human Relations
15	15.00	Petani & Mengis	Technology and the hybrid workplace: the affective living of IT-enabled space	2023	International Journal of Human Resource Management
0*	No data	Barth & Blazejewski	Agile office work as embodied spatial practice: A spatial perspective on 'open' New Work environments	2023	Scandinavian Journal of Management
4*	No data	Blomberg & Kallio	A review of the physical context of creativity: A three-dimensional framework for investigating the physical context of creativity	2022	International Journal of Management Reviews
50*	No data	Weinfurtner & Seidl	Towards a spatial perspective: An integrative review of research on organisational space	2019	Scandinavian Journal of Management
212*	No data	Brown & Humphreys	Organizational Identity and Place: A Discursive Exploration of Hegemony and Resistance	2006	Journal of Management Studies
132*	No data	Watkins	Representations of Space, Spatial Practices and Spaces of Representation: An Application of Lefebvre's Spatial Triad	2005	Culture and Organization
124*	No data	Prior	The Architecture of the Hospital: A Study of Spatial	1988	The British Journal of Sociology

			Organization and Medical Knowledge		
292*	No data	Kornberger & Clegg	Bringing Space Back in: Organizing the Generative Building	2004	Organization Studies
29**	No data	Siebert, Bushfield, Martin, Howieson	Eroding 'respectability': Deprofessionalization through organizational spaces	2018	Work, Employment and Society
266**	No data	Baldry	Space - the final frontier	1999	Sociology
178**	No data	Halford & Leonard	Space and place in the construction and performance of gendered nursing identities	2003	Journal of advanced nursing
12**	No data	Ernst	Between change and reproduction: Profession, practice and organizational space in a hospital department	2017	Journal of Organizational Ethnography

The selected sample of publications includes review pieces, conceptual articles, empirical studies, and papers focusing on methodology. The authors are mainly based in the UK, although France, Germany, Switzerland, Italy, Israel, Scandinavia, China, and the US are also represented in the sample. This is reflected in the geographical location of the empirical studies, which were mainly conducted in the Anglo-American world or Western Europe.

Step five: Analysis

The selected sample of publications was then analyzed using typical qualitative techniques, such as thematic analysis and content analysis, through identification and reporting of themes, suitable for the chosen approach (Snyder 2019). According to Snyder (2019), the advantages of semi-systematic (or structured) reviews are that they are suitable for "detecting themes, theoretical perspectives, or common issues within a specific research discipline or methodology or for identifying components of a theoretical concept" (p.335). This approach is also useful for mapping research fields.

Inductive and deductive analyses were conducted simultaneously. Deductive in two ways: a) the basic information of the publications' topic, purpose, research question, theoretical approach, methodology, materials, research context, findings, and contribution were mapped into a pre-designed chart and b) the RQs of the review were focused. I also conducted inductive analysis, registering divergent or similar views between papers on central concepts. For example, the structure-agency debate, presented in the following section, was not something I actively searched for; it emerged from the analysis. Another example is the categorization of

the empirical studies into closed, semi-closed, and open spaces. The results of the review are presented in three sections of findings: theoretical, methodological, and empirical.

Theoretical perspectives on organizational space

There is an extensive catalog of approaches for studying space. One approach is to focus on conceptualized spaces such as liminal spaces. Looking at the interplay between structure and agency in a built environment, using concepts that grasp both is another option. Analyzing the symbolic communication of a building is a third approach. However, before discussing these approaches, I want to start with some general remarks on the theoretical perspectives presented in the reviewed publications.

Interpretive and critical social theories dominate the organizational space literature. When looking at the theories used in organizational space publications, there is a clear dominance of Henri Lefebvre's' work "The production of space" (1974/1991)[5]. Papers that use other theorists often do so in combination with Lefebvre's work. A range of classic social theory is used, for example Joan Acker (Wasserman & Frenkel 2015), Pierre Bourdieu (Ernst 2017; Siebert et al 2018), Judith Butler (Tyler & Cohen 2010), Michel De Certeau (Halford & Leonard 2003; Munro & Jordan 2013; Best & Hindmarsh 2019), Gilles Deleuze & Félix Guattari (Beyes & Steyaert 2012; Munro & Jordan 2013), Michel Foucault (Prior 1988; Kornberger & Clegg 2004; Taylor & Spicer 2007; Dale & Burell 2008; Siebert et al 2018), Erving Goffman (Prior 1988; Shortt 2015; Best & Hindmarsh 2019), David Harvey (Dale & Burrell 2008), and Nigel Thrift (Beyes & Steyaert 2012).

Lefebvre, a French Marxist philosopher, was a Sorbonne graduate and professor of sociology at Paris Nanterre University since 1965. In the production of space, Lefebvre criticizes the dominant view of space and emphasizes the ongoing and historical social production of material spaces (Lefebvre 1991; Watkins 2005; Dale & Burell 2008). According to Lefebvre (e.g., 1991), the dominant view of space is the perspective of architects, planners, and managers, which represents a "god-mode"-view, disregarding the social and embodied inhabitance of spaces. This view is based on distancing by reducing social life into plans and blueprints, and when doing so, senses other than the visual are subordinated. Lefebvre criticizes this view as it hides ongoing place production, which is characterized by conflicts and the exclusion of groups. Space is continuously produced and shaped by social power relations, according to Lefebvre (Lefebvre 1991; Dale & Burell 2008). While Lefebvre's' approach emphasize the intertwined nature of the social and the material, he also separates the social and material analytically when distinguishing between the physical manifestation of built space and its social production (Lefebvre 1991; Dale & Burell 2008).

"Lefebvre's' triad" is the most common analytical tool used by organizational space scholars in the review sample. Lefebvre's' triad refers to three dimensions of space and the interplay between them; the conceived, lived, and perceived. Conceived space (representations of space) refers to space designed or intended by planners and managers. Lived space (representational

[5] One paper focuses more on his work "Rhythmanalysis" (Nash, 2020).

space) refers to the symbolic meaning of space. Perceived space (spatial practice) reflects the everyday practiced space (Lefebvre 1991; Dale & Burell 2008). However, it is somewhat confusing that scholars refer to different triads drawn from Lefebvre's' work. For example, Hernes (2004) writes about Lefebvre´s three epistemologies of space: "real space" (the built), "representational space" (for example an organization chart), "representations of space" (imaginary spaces), but also three types of spaces: mental (meaning), social (relations, production, reproduction), and physical (material conditions). Tyler & Cohen (2010) uses Lefebvre's "three spatial realms": spatial practice (perceived space), representations of space (conceived), representational space (lived, direct). Both refer to "Lefebvre's triad."

Based on this review, it is not always clear what Lefebvre´s triad means for at least three reasons. First, because Lefebvre used more than one conceptual triad, it is uncertain which is referred to (as displayed above). Second, because Lefebvre's concepts sometimes slip away from their original meaning and are superficially used, it may be difficult for readers to understand what the concepts in the triad mean. Third, because the relationship between the three concepts in the Lefebvre's triads is not always explicit, it can sometimes be difficult to evaluate the balance between them. Analyses that emphasize only one- or two-dimensions risk clouding the relation to a full spatial perspective, which is when all three parts of the triads are included and balanced in the analysis. However, the main point is that space covers three central dimensions: planning, inhabitants, and symbolism.

Similarly, Taylor & Spicer (2007) presented a framework that distinguishes between three perspectives on space: distance (functionalist), lived experience (interpretivist), and power relations (critical). According to them, the functionalist view is the largest body of academic research on organizational space, paying particular attention to logistics, open-plan offices, and hybrid/virtual work (Taylor & Spicer, 2007). Lived experience refers to the meaning of spaces brought on by its residents. This category focuses on symbolism, culture, and stories told by built spaces, and how such stories are reframed and resisted through alternative stories (Taylor & Spicer, 2007). The power relations trajectory is more engaged with control and supervision of work within organizations, institutionalized power through buildings (such as prisons and hospitals), and capitalist planning of cities (Baldry 1999; Taylor & Spicer 2007).
The section proceeds as follows. First, I map and explain various concepts of spaces used in the reviewed sample of articles. Second, I present the debate on structure and agency in the literature on organizational space. I will relate to this debate throughout this review. Third, I will describe the perspective of building communication.

Conceptualizations of spaces

Space was defined differently between publications in the reviewed sample. It may refer to analyzing an organization's built environment or more abstract spaces, such as metaphorical spaces or spaces on organizational charts. It also differs depending on whether space is the object of study, or if it is used as a lens to study something else (Hernes 2004; Watkins 2005; Taylor & Spicer 2007). Studies of the built environment have conceptualized spaces in various

ways. Spatial concepts such as ‘liminal, terminal, and alternating’ spaces have been suggested. This section describes the concepts identified in the reviewed studies.

A central distinction in the literature on organizational space is between space as a place (for dwelling, meaning) or a non-place (just instrumental) (Weinfurtner & Seidl 2019). Non-places are “devoid of meaning, social relations or identification; they exist temporarily and do not have any connotations of relationships, history or identity for the individuals that occupy them” (Auge 1995 in Weinfurtner & Seidl 2019). The street is a place for police officers, but it can be a non-place for citizens in general. This highlights the subjective nature of what spaces are – it can be very different between individuals, and whether a place is meaningful depends on which space user that one asks.

Non-places are similar to transitory and liminal spaces (Shortt 2015), which refer to pockets of space, such as corridors or bathrooms, outside the ‘planned’ and dominant spaces. However, liminal spaces can mean a lot to its residents, aligning with the ‘meaning’ aspect of places, rather than non-places. “Often, in hospitals, where time is tight, space scarce, and emergencies common, corridors become scenes for resuscitation and drama” (Kornberger & Clegg 2004, p.1106). Munro & Jordan (2013) offers the concept of ‘smooth’ space drawing on Deleuze. In contrast to ‘striated space’ which represents a functionalist view where space is the planned and abstracted space used by managers, smooth space refers to spaces defined by how it is occupied and used and is often difficult to regulate or map such as deserts or oceans (Munro & Jordan, 2013, p.1502). Papers addressing smooth, liminal or transient spaces (Iedema et al 2010; Munro & Jordan 2013; Shortt 2015) focuses on non-dominant spaces, and often cover how residents of dominant spaces find alternative spaces which are meaningful to them, like pockets outside the controlled work environment, often outside the planned or designed space. Shortt (2015) therefore argues that dwelling better captures the meaning of liminal spaces.

Hybrid spaces may carry different meaning. It may refer to that a built environment is hybrid, as they function both as places for the public, and for work. Hybridity does however not necessarily refer to spaces that are used by various inhabitants for different purposes but may instead represent hybrid work which means that ‘work’ is the unit of hybridity and hybrid work can be carried out at different locations (Petani & Mengis 2023). It is therefore important to specify what unit that is hybrid in each setting, whether it work or space.

Dale & Burell (2008) offers a typology of non-dominant spaces, and distinguishes between margin space, liminal space, alternating spaces, alternative spaces, and opening space. Margin and liminal spaces make room for activities not sanctioned by dominant space such as graffiti on trains in depot, roof-running, resistance movement in tunnels and others. The theoretical distinction between margin space and liminal space is that liminal space can be localized quite centrally, or in between two dominant spaces, while margin spaces are close to an outer border or at the end of a border. Alternating space refers to a place that changes it usage and residents, similar to the rhythm of a space. Alternative spaces mean spaces for something that is different but exists within dominant socio-spatial forms, for example Disneyworld or brothels (2008, p.249f). Formal property rights are central to alternative uses of space. The last category,

opening spaces, represents inclusion and the tearing down of barriers, through enabling unregulated movement such as migration or invasion.

Terminal space refers to space that is dominated "through martial strategies" (Kornberger & Clegg 2004, p.1102) - it is characterized by security considerations and is designed only with surveillance, warfare, or control in mind. Prisons are the obvious examples of these kind of spaces that function as metaphor for other places dominated by security and surveillance considerations. Similarly, 'disciplinary space' also refers to control and surveillance. However, the central mechanism for this concept, drawing on Foucault's works, is architectural division "into as many sections as there are bodies or elements to be distributed" (Kornberger & Clegg 2004, p.1103). Here, power is about locating and emplacing objects of control in a built structure. Disciplinary space is about controlling units inside the space while terminal space can be used for spaces defined by surveillance and security considerations in a broader sense, as when protecting a nuclear plant or similar.

To sum up, the literature sample reflects an unclear ontology but has contributed to conceptualizing spaces by suggesting various spatial concepts. 'Space' is rarely defined; however, it often refers to environments where the social and the built environment is intertwined, reflecting the common point of departure in Lefebvre's work. The spatial concepts inventory provides a typology of spaces, it is however difficult to evaluate the analytical power in each these concepts as they are seldom analytically specified, they are often illustrated through examples rather than drawing out the specifications and implications of each concept. In the next section, I turn to the central structure-agency debate that I claim characterizes the reviewed publications.

Built environment – determining behavior?

Built environment steers the social, at least to some extent. The built environment can be seen as fixed or continuously created, and as a passive container of the social or actively trigger social interactions and patterns. While often described in terms of innovation and flexibility, architecture can be seen as a means to stabilize time, to fix space, which is conservation of the present as an attempt to counter the ongoing nature of space production (Dale & Burell 2008, p.31). If built environments are fixed, there is no agency for space users to alter the built itself, just to enact it in different ways. However, the organizational space literature emphasizes the ongoing construction of spaces, pushing the intertwined nature of the social and the built, which enables spatial agency among residents. For example, Kornberger & Clegg (2004) argues for 'generative buildings' which allow for spatial enactment by space users. The organizational space literature therefore builds on the arguments that a) the built environment matters for its social inhabitance, and b) there is agency among residents to negotiate and redefine space(s) within their built environment. It is however unclear how much agency there is in relation to different built environments.

The interplay between residential agency and the built structure is a recurrent debate in the organizational space research field. For example, Zhang & Spicer (2014) show empirically, and

Baldry (1999) argues more conceptually, that organizational hierarchy is fixed in the built environment as well as enacted by residents. While the 'generative building', according to Kornberger & Clegg (2004), will make room for spontaneous, positive power, they neglect negative power relations between space users. Space is gendered as well as room for other power relations drawing on class, status, pay etcetera (Tyler & Cohen 2010; Zhang & Spicer 2014; Wasserman & Frenkel 2015; Barth & Blazejewski 2023). When generative space is created to grasp informal social exchange normally occurring in liminal space, it may become dominant, and some other space becomes liminal as its very definition is unplanned space (Dale & Burell 2008).

A specified level of agency can however not be linked to a specific built environment, as these environments are inhabited for different purposes and to different extent. Different groups of individuals have different relations to the same space. The social configuration of each built environment also shifts, sometimes rapidly, which continuously redefines the conditions for space inhabitance.

While it may be difficult to specify the level of determinism of buildings, I draw out one hypothesis from this discussion; that the level of determinism by a built setting varies with certain conditions for work and organization. If the space users depend on specific locations or rooms and the tools within it, to do their job (for example a dentist), the built environment steers behavior more, than if the space users are less dependent on working in a specific setting (there is more space for an author to choose the location of work, as well as structuring his or her workplace). Following the above, buildings should be categorized in groups that share similar conditions for a nuanced analysis as dependency on the built varies between the groups. One categorization offered by Markus (1993, in Kornberger & Clegg 2004) is a) buildings that shape people (prisons, schools), b) buildings that produce knowledge (libraries, museums), and c) buildings that produce and exchange things (factories, markets). While this demonstrates the value of categorization, it is incomplete. It does for example does not cover offices whose design indeed can shape the social patterns in it (Zhang & Spicer 2014; Wasserman & Frenkel 2015). Buildings that provide open spaces intending to break, or at least interfere with, power relations and hierarchies, rather produce and reproduce power relations when enacted (Kornberger & Clegg 2004; Zhang & Spicer 2014; Barth & Blazejewski 2023).

In what way a built environment steers the social, and regarding what aspects, is a more fruitful focus than trying to specify a level of agency. Spatial agency is however an important focus for conducting a relevant spatial analysis, as it enables scrutiny of the interplay between residents and buildings (Kornberger & Clegg 2004). There are ways in which buildings steer social possibilities; by ordering flows of people, emplacing persons and things, controlling paths for movement, acoustics, communication, and by categorizing space users in inhabitants and visitors (Kornberger & Clegg 2004). Nevertheless, other studies (Baldry 1999, p.539; Dale & Burell 2008, p.231) claim that there is a risk of putting too much emphasis on residential agency in shaping how the built space is used, for example emphasizing 'personalization' like choosing colors in a delimited area. While that is important for the individual identity as well as displaying a line of flight from managerial control, it risks downplaying structural conditions

for work such as its emplacement, location, floor plan, and other built aspects that are not as easily modified by residents (Baldry 1999, p.544). The structure-agency debate is central to the organizational space research field, and previous reviews aim to advance the field by bridging this debate (Taylor & Spicer 2007; Stephenson et al 2020). This is done by proposing analytical concepts that cover structure as well as agency, rather than only focusing on one of them.

Stephenson et al. (2020) presents what they call a process-oriented approach to organizational space which aims to bridge the debate on built structure vs residential agency. Similar to Taylor & Spicer (2007), they suggest a changed perspective from static ways of looking at space to a more dynamic approach. Stephenson et al (2020) strived to move beyond compartmentalized research claiming that organizational scholar's studies space from their respective and distinct take on organizations. Building blocks from various trajectories were identified: "physical structure, distance, workplace arrangements, and spatial scale" (Stephenson et al 2020, p.799). These building blocks represent a historical and static view on organizational space, according to the authors, while a process view would rather focus on boundary work, movement, assemblages, and scaling, they are also concerned with the ongoing nature of producing space. Boundary work can be physical or more abstract demarcation of territory. Movement captures both what is physically constructed as well as the agency side of residents´ spatial work. Baldry (1999, p.541) has for example highlighted movement's gendered aspects, suggesting that men's expansiveness is an important component of acting masculine, while ideals of femininity are that women should be neat and not take up much space. Assemblages refers to how and which actors and materials that define space are put together.

Scaling is addressed by Taylor & Spicer (2007) as well as Stephenson et al. (2020). Taylor & Spicer (2007) criticizes the use of mainly one of Lefebvre´s dimensions of space – the lived experience and proposes to resolve this issue through a stronger focus on scale in organizational space research. Not as in the level of analysis of the researcher but "the level of analysis of action which the actors themselves use" (Taylor & Spicer 2007, p.336), i.e., what perspectives that follows actors' hierarchical level. Senior managers may view their organization as the relevant scale, middle managers refer to their unit, and workers may refer to their office. Taylor & Spicer (2007) suggest that scale as analytical focus, should be changed to scaling, to make it reflect the ongoing interplay between scales and levels. Following this, Stephenson et al (2000) defined scaling as referring to the extensiveness of space, its reach, making "relationships, practices, activities, and flows that expand or shrink the spatial reach" (Stephenson et al 2000, p. 812) the focus of a spatial analysis.

Rightful ownership over space is a central part of life, according to Dale & Burell (2008). Addressing ownership is therefore another relevant way of analyzing space. Baldry (1999) emphasizes that a building is property and a source of rent for an owner. Munro & Jordan (2013) are among the few others that discuss ownership and property. They contrast Baldry's' approach to property by showing how street-artists developed another type of ownership which is temporary and rather than judicial ownership, street-artists appropriate space during a timeframe and describe how they own a space. Those street-artists work and make an income on space that is not formally theirs, they just appropriate space for their performance. Spatial

tactics to appropriate space may therefore be a way of transgressing formal property rights of a building, and its possibilities for generating an income. Owning space is a way of managing it, and Munro & Jordans (2013) fluid perspective on ownership shows that ownership is not a definite structural condition, instead there is spatial agency of inhabitants to negotiate even this aspect of space. Ownership may therefore cover both structure and agency perspectives and function as a bridge similar to the concepts proposed by Stephenson et al (2020) and Taylor & Spicer (2007).

The communication of buildings

While built environment can steer the social by arranging interaction patters and how space is used, another way of steering is through symbolism and communication activities that are directed towards peoples' understanding of a space. A building's communication can be directed internally to the organizations own employees, for example when built workplace is designed as all fun and play, or cover activities normally performed outside work such as day care for children, kitchen/cooking, sleeping, and massage chairs. This blurs the borders between public and private through the building's symbolic communication (Dale & Burell 2010).

But a building does not only carry symbolic meaning for its residents, it also communicates to a wider audience externally (Kornberger & Clegg 2004; Dale & Burell 2010). Location at expensive land and prestige design may send messages to clients, competitors, the public, and potentially future employees. The presence of a building may also hide or disguise alternative uses of land as land use may seem fixed when occupied by a building (Kornberger & Clegg 2004, p.1104). The design and its communicative message are sometimes sector specific (Baldry 1999), what is seen as wanted by banks or hospitals differ as some wants to emphasize their audiences' feelings of security while others focus on other values such as accessibility.

At the same time, some claim that architect's main audience primarily is other architects. Baldry (1999) illustrates this by drawing on the Lloyds building in London (Lloyds is an insurance company), where design was prioritized over function and budget to the extent that 18 months after its occupation, the company considered hiring a new architect for a total internal refit despite that the building already was expensive. Architecture is about aesthetics rather than organization (Dale & Burell 2008). This gives reasons to look at what buildings communicate externally as well as internally and consider what audience communication activities aspects target. Another important audience for architects is decision-makers, primarily at policy level, as they control the resources available for architectural endeavors (Dale & Burell 2008). Despite that dependency, Dale & Burell (2008) argues that architects hold a privileged position due to their power to define what architecture is (some buildings are, some are not).

When buildings are studied in this symbolic communicative respect, it is often new landmarks, prestigious design buildings that are attended to. There may also be reasons to study what more mundane or old buildings communicate, especially when located on less attractive land, looking at what is hidden away and from whose gaze (Shortt 2015).

Methodological perspectives on organizational space

This section highlights two methodological issues observed in the reviewed publications. The first issue is about how to grasp the interplay between the social and material directly, and the second regards the representation of findings in text. In general, there seems to be a curiosity for new and innovative research methods in studying organizational space, not least due to the difficulties of representing research findings as experienced by researchers.

Some publications explicitly emphasize the importance of ethnographic and visual approaches to studying space (Yanow 2010; Shortt 2015; Best & Hindmarsh 2019; Nash 2020). A common approach is to conduct case studies where an organization or a built environment is the unit of analysis. Researchers study these cases qualitatively, using ethnographic techniques such as interviews, observations, walking interviews, photographing, participant photographing, auto-ethnography, videorecording, and participation (Watkins 2005; Brown & Humphreys 2006; Gastelaars et al 2010; Iedema et al 2010; van Marrewijk 2010; Munro & Jordan 2013; Zhang & Spicer 2014; Barth & Blazejewski 2023). Walking rhetoric's refers to the linkage between individuals' movement in space and their identity construction – what they show says something about themselves (Dale & Burell 2008, p.131). This highlights that movement and walking is not just about what spaces paths take but also in what way individuals move, their posture, orientation, eye contact, pauses, confidence and more (Halford & Leonard 2003, p.204). The above approaches are mainly used to study space' users' practices, experiences, and meaning in relation to a workplace. However, researchers focusing on how a built environment has developed, looking at the actors involved, utilizes a historical method. They trace the development of a built environment through more classic qualitative methods such as primarily document studies and interviews (Prior 1988; Dale & Burrell 2008; De Vaujany & Vaast 2014).

Using photos are quite common, sometimes taken by participants, sometimes by researchers (Munro & Jordan 2013; Zhang & Spicer 2014; Shortt 2015). Best & Hindmarsh (2019) used video recordings, allowing for studying movement more closely than only taking notes during observations. Same authors studied tour guides and even trained themselves as such for better understanding. Others used art works both for their own analysis and for producing material together with research participants (Tyler & Cohen 2010; Beyes & Steyaert 2011). Beyes & Steyaert (2011) presents a novel method built on slow motion video projects of the artist Bill Viola. They argue that slowing down the embodied spatial experiences and paying attention to details can produce a better experience of the material surroundings as it turns around "rhythms, intensities, and details".

The techniques that bring the researcher closer to the spatial experiences of the material carries a problem of representation. While advocating embodied experiences of space, Dale & Burrell (2008) also acknowledge difficulties of representing the material, embodied, and sensory in academic discourse and theorizing (which often puts emphasis on abstracted conceptualizations). Beyes & Steyaert (2011) addresses this problem using non-representational theory to suggest a more-than-representational approach where researchers build relations with the material through the above-mentioned slow-motion approach, from

which theorizing should occur beyond a "peep hole" analysis of space, rather being in space. Similarly, photos cannot only be used as representations of space according to them, it must be used as triggers in conversations with residents, moving closer to the material experience.
A general impression of the organizational space literature is that scholars strive to improve their methodological techniques to better grasp and understand the embodied experiences of spaces. For example art is sometimes experimented with (Tyler & Cohen 2010; Beyes & Steyaert 2012), while Panayiotou & Kafiris (2010) looks at the portrayal of organizational spaces in popular culture (movies). While scholars try out various creative approaches to grasping space and generating material, the representation part is less varied in the articles under scrutiny in this review. Only looking at journal articles and other traditional academic outlets, often static, may however not be the best approach for analyzing creative representation of research.

Empirical studies

The reviewed publications do not represent the functionalist view (Taylor & Spicer 2007), except from Mouritsen (1999), as they represent the 'spatial turn' away from viewing space as merely physical distance. Instead, the organizational space literature represents interpretative and critical approaches to space.

In this section, I present empirical studies of organizational spaces in three categories, non-public, semi-public, and public spaces. These categories of spaces are then analyzed in relation to the structure-agency debate presented previously. There is a table for each category, that presents a brief overview of the articles covered. The second column shows what built space that the authors address. The third column answers whether each publication include an analysis of the human intentions of the built environment (several don't). The fourth and fifth column are tightly linked and shows what is managed and by whom.

Non-public (closed) spaces

Factories, offices, prisons are out of reach from ordinary citizens and therefore categorized as non-public spaces. While these spaces are clearly different, they share that the general public can't just walk straight in, the spaces are reserved for managers, workers, and prisoners.

Table 2. Empirical publications addressing non-public spaces.

Publication	**What space?**	**Does the paper cover the intention of the built design?**	**What is managed?**	**Who is managing it?**
Mouritsen, 1999	Logistics in technology production	Yes	Production processes	Managers
Halford, 2005	Large financial services company	No	Multiply located work	Managers and workers
Kenis et al, 2010	Hi-tech Prison	Yes	Officers, prisoners, processes	Designers, planners
			Malfunction, prison practices not designed for	Officers
Zhang & Spicer, 2014	Tax authority office in China	Yes	Organizational hierarchy	Designers, managers, workers
Wasserman & Frenkel, 2015	Office, Israeli Ministry of Foreign Affairs	Yes	Power relations (intersectional perspective)	Managers, architects, workers
Barth & Blazejewski, 2023	Open office	Yes	Organizational hierarchy	Designers, managers, workers

Mouritsen (1999) studied the logistics of a Danish technology corporation regarding its production facilities and processes. This article compares information-based with hands-on management, a functionalist study of how management control systems are best designed to facilitate efficiency and flexibility. Mouritsen's (1999) paper is an example of the view that 'spatial turn' research position themselves against.

Halford (2005) studied the introduction of hybrid work in a UK financial services company – home working was encouraged at the same time as an open plan office was introduced. Hybridity here refers to working at home as well as in "organisational space" (p. 21), at work, that is – multiply located work. As the home setting allowed for isolation, workers preferred to perform tasks that require focus at home. Home working also allowed for multitasking private and work routines, such as logging in while the kids are brushing their teeth. Office work made it easier to interact with colleagues regarding work, but also made coming to the office more of a social event. Workers plan what tasks to perform at each work location (home and the office) and how they do it differs between these locations. Collegial control and managerial control diminished as visual and proximate relations were difficult to uphold. Managers therefore made

efforts to check up on workers to control that they are doing their job, but also caring for their employees' work situation.

Kenis et al. (2010) studied a prison constructed to standardize prison officers' work. The prison, built in 2006, relied on supervision and control through information technology, minimizing direct contact between staff and prisoners. It was designed based on "panopticon, group cells, and absence of team rooms for officers" (p. 61), and all prisoners had an electronic wrist band that tracked their position. There were also noise detectors that identified human screaming and yelling. Group cells were expected to be cheaper in terms of square meters, but also because prisoners were expected to help each other rather than call on officers' help and behave because of group pressure. The prison was seen as a mechanist bureaucracy with little room for slack, improvisation, professional care, and so on. However, the new management of both officers and inmates prompted new techniques for accommodating the daily challenges of prison practice – compensation systems for technical malfunction were invented, practices were developed for combining prisoners' with different personalities in group cells to stifle aggressive behavior, new work roles for prisoners were developed to cover cleaning and other maintenance tasks, officers' developed systems for recording the information about prisoners' behavior and privileges as well as their work tasks and schedule. The architectural purpose was discipline, aiming to stifle creativity, but the authors in contrast claims that the new conditions triggered creativity.

Zhang & Spicer (2014) writes about a Chinese government office (a tax authority) where a thorough ethnographic study was conducted that covered managers and planners as well as workers. "The building's internal layout minutely specified the Bureau's hierarchy" (p. 747), for example through a special button that would take an empty elevator directly to the top management floors. Several design features were chosen as they would symbolize hierarchy. A circle-shaped house was a dismissed option in the design process as it wouldn't be hierarchical enough. Décor such as wallpaper quality and color were chosen to reflect hierarchical borders between floors. However, workers also inscribed hierarchical meaning to various features of the building that not necessarily was hierarchically intended such as a water fountain that shares similarities with a top managers name and that certain offices or spaces were "haunted". In everyday movement in the building, hierarchy was enacted through order of walking, seating, arrival, as well as access to bathrooms and other spaces that was reserved for top managers. This article presents concrete links between the built environment and organizational hierarchy. While the building's strong steering is unopposed, there were also examples of agency by residents. Their agency was however restricted to enacting the hierarchy or resisting it through identity and talk, it didn't materialize in physical alteration of the building or changed practices.

Wasserman & Frenkel (2015) analyzed the Israeli ministry of foreign affairs, looking at power relations between groups from an intersectional perspective where the authors claim to combine class and gender. It is however gender that is at the forefront of the analysis while class is paid less attention, at the same time as cultural aspects plays a significant role. The ministry moved to a new building, which the authors describe as west oriented. The new building was supposed to emphasize western modernity and part with middle east culture. The authors present two

ways in which the organizational inequality regime is established in the organization. First, discursive spatial work by managers and architects legitimizes the aesthetic choices made. They strived to educate the taste of workers and administrative staff and shape it by presenting certain colors as modern while colorful ethnic carpets were discouraged. Second, material work by the same group refers to emplacement of workers and steering workers' behavior patterns through the built environment, as well as choosing colors, shapes and materials. High level civil servants were placed in the top floors or in specific "wings", while lower rank, often female, workers mainly worked in the lower floors. As a response to this setting, the authors also highlight how workers relate to their physical environment through bodily practices as well as emotional and interpretative work. This often reproduces gendered and cultural power relations. Senior female civil servants played an important role here, as they aligned with masculine and modern ideals and simultaneously criticized lower ranked workers (often women) low cultural habitus.

Barth & Blazejewski (2023) did an ethnographic study at a German financial service company, analyzing the redesign of office spaces into open plans. The office redesign was meant to reflect the 'agile' ideal of office work, increasing flexibility, innovation and improve operations overall in unspecified ways. Planners explicitly said that not only the office plan but also the process of implementation was open, as it was a pilot project at two units. Employees (not clear if this refers to managers or workers) were involved in several workshops before the re-design and planners claim they wanted employees to involve in the design process. Managers wanted the office space to open for new interactions and that work should be seen and heard – a "lively and vibrant workspace" (p. 6). In using the office, space users took different approaches, one was *floating*, which refers to not being spatially delimited. Floaters don't take a specific desk for themselves but can work at various locations outside, in cafes, in office. They have a lot of meetings in different locations and often move through space keeping noise low, displaying a specific presence. Another practice was *crowding* which means gathering in groups of 4 -6 people engaged in conversation, work related or not, not caring about disturbing others rather displaying a strong visual as well as auditive presence. The third and final category was *settling*, meaning that workers settle in a specific workplace to do their job. They leave their stuff at a specific place to mark it up and try to keep movable walls fixed. Barth & Blazejewski shows how space becomes contested between users in open plan offices. They also show how especially floating is a spatial pattern that is aligned with, and reproduce, the agile ideal that is mainly performed by managers. As Dale & Burell (2008, p. 220ff) have suggested, the link between the built environment and HR-policy generates powerful control. Rather than 'open' being viewed as a physical setting, Barth & Blazejewski suggests 'open' should be understood as a socially generative concept, opening for specific social interactions that in their case, reproduced organizational hierarchy.

Semi-public (semi-open) spaces

This category of spaces covers medical and educational institutions – organizations that is partly open to the public. Anyone can walk into a university or hospital, but I have not classified these spaces as fully open for two reasons. First, not anyone walks into these spaces, they are often

patients or students, which is a share of the general public. Second, there are several spaces out of reach for the persons visiting such as offices and labs for example.

Table 3. Empirical studies addressing semi-public spaces.

Publication	**What space?**	**Does the paper cover the intention of the built design?**	**What is managed?**	**Who is managing it?**
Prior, 1988	Health institutions	Yes	Space	Managers/ Scientific Discourse
Halford & Leonard, 2003	Two hospitals	No	Professional identity	Nurses
Brown & Humphreys, 2006	Further education college	Partly	Organizational identity	Senior management team vs. staff
Iedema et al, 2010	Hospital clinic	No	Complexity	Professionals
Gaastelars, 2010	School at Utrecht University	Partly	External image	Academic leaders
Tyler & Cohen, 2010	University offices	No	Gendered space at work	Female workers
de Vaujany & Vaast, 2014	University	Yes	Organizational legitimacy	Managers
Ernst, 2017	Hospital	Yes	Relations between professionals	Managers, professionals
Siebert et al., 2018	Hospital	No	Professionals	“architects and managers” (p. 337)
Middleton et al., 2020	Hospital, emergency department	Yes	Patient flows, professional work	Built space

Prior (1988) studied the interplay between medical discourse and its manifestation in the built environment. She proposes that an institution's architectural form defines the objects of therapy within its walls. For her, the built environment both represents and produces the social. Through tracing changing architectural forms over time, she connects the built with discourse, for example how pavilion-style hospitals are linked with a specific theory of disease that emphasizes reducing contagion by regulating air flow and other techniques. She argues that hospital planning often is based on new ideas of health care; “management is always present”.

Examples are that “the provision of a mother’s divan helps to constitute the nature of the ‘maternal bond’, and that the provision of a play space or playroom helps to constitute the nature of ‘normal child development’” (p. 101).

Halford & Leonard (2003) looked at the identity work of nurses in relation to the built hospital environment and focused on access to space, movement in space, and the meaning of different spaces. Nurses said they enjoyed the action, challenges and specialization in care at the larger hospital while nurses at a smaller hospital said they opted out of stressful work environments, reflecting a professional stratification between hospitals (Halford & Leonard 2003). Nurses had the least access to space compared to other workers. They were confined to their respective wards and had the least staff space. Their work was always accompanied by patients or visible to visitors, meaning that nurses seldom got any break from acting their professional role as nurses other than they make space for themselves by using transitory or liminal spaces. Some nurses in their study had got their own staff room, which was highly appreciated and personalized. However, nurses also strongly expressed a sense of ownership of the ward, partly because of their confinement, which also coincided with suspicion towards other organizational units. In comparison, doctors “have considerable freedom to roam and have access to far more nonpublic space” (Halford & Leonard 2003, p. 204) which represents a hierarchy of professions. In wards, nurses used body language and movement to own space and make doctors visitors, reflecting the professional interplay. Embodied ownership of space was also gendered as nurses actively used or resisted gendered nursing roles.

Brown & Humphreys (2006) studied a recent organizational merger, a UK College for further education, focusing on how the place is used as a discursive resource in the strive to reach a hegemonic narrative for an organization's identity. They show how different groups draw on ‘place’ as a resource in their “efforts to author versions of their organization’s identities, and that these accounts both constituted acts of nostalgia, fantasy and scapegoating, and were moves in an ongoing struggle for control over the college as a discursive space”. While the senior management team views the place as “a site for business activity (unit of resource)” and that the “place will continue to improve”, staff wanted the college to be a “place for teaching and learning” and wanted the college relocated because of the inappropriate location (nearby drug dealing, traffic) (p.238, 247). The authors thereby emphasize how different groups compete over defining their organizations.

Tyler & Cohen (2010) focused on gendered space in a UK University. They probed into the experiences and practices of women, academics as well as administrative staff. The authors show how women are spatially constrained through being trapped and made invisible at the same as they also are hyper-exposed. The interviewed women share how they have smaller working spaces than men and how they are expected to be accessible. Another finding is the spatial invasion and spillage that women experienced from male colleagues. Sharing workspaces with men means being “bombarded with him and his stuff” (p. 187). A third category of experiences reflect bounded appropriation and refers to how women personalize their workspace in a selective and bounded way. The women experience a need to balance how they present themselves in relation to the gender regime they work in. The women in Tyler &

Cohen's study displays resignation towards the spatial arrangements, and work within this constraint to present themselves as professional in relation to various gendered organizational setups.

Iedema et al (2010) studied a clinical team in a Sydney hospital. The authors highlight how medical care can be a complex and uncertain task, which rarely is accommodated in hospital design. Emphasizing the importance of liminal spaces, this study shows a multi-disciplinary clinical team occupies space, focusing on corridors. The authors argue that specifically a bulge in the corridor "drew people in" (p. 43) and made room for professional conversations because of its lacking functional purpose. The corridor served as an arena where informal communication and interaction procedures occurred, moving the health care professionals out of their formal roles and out of professional hierarchies as well as short-circuited formal procedures. Corridor space was used to ask each other questions that would risk them being seen as ignorant in a more formal setting, to discuss how to approach other colleagues to achieve their aims (navigating hierarchies and relations with other professionals and organizations), and to acknowledge mistakes - "the excess and seemingly wasted space of the corridor bulge in fact played a critical role in ensuring the safety and effectiveness of clinical practice" (p. 44). In this way, Iedema et al (2010) argues that the corridors' enablement of informality, makes professionals manage complexity. The authors view the corridor as a liminal space, without any particular intention other than enabling physical movement. However, they do not show any evidence for that assumption, and they do not make explicit whether it is their own assumption or if it draws on a native assumption of the professionals in the study (the bulge may have been intentionally designed).

Gaastelars (2010) analyses the site, skin, structure, space plan, stuff and service of the School of Public Governance at Utrecht University. Gastelaars (2010) is concerned what a building can communicate and more specifically make visible. She shows how the building enables an organization to display certain activities (teaching, student group work) while hiding others (decision-making, research). She argues that the schools' autonomy is manifested in the re-location to a new building in combination with hindering a bilocation (in several campuses) while also distancing the school from the university's' administrative center.

De Vaujany & Vaast (2014) are concerned with the legitimacy for the Paris Dauphine University and how it was managed during a relocation to buildings previously used for other purposes. Of special interest to them was the relation between a building's role in external legitimacy for an organization, while simultaneously regulating work within its walls. The university inherited a NATO-building with small rooms, which shaped practices as teaching was conducted in smaller groups of students. This was described as a pedagogical innovation to external parties. Furthermore, the buildings' "fortress appearance" (p. 720) signaled prestige and resonated with an elite selection process. In a later stage, the building was perceived as decrepit which interfered with the image of the university as modern and prestigious. The small rooms that previously enabled the image of pedagogical innovation hindered pedagogical restructuring and innovation later on. De Vaujany & Vaast (2014) shows how a building can be described as spatially delimiting at times while open and flexible at other times, depending on the audience

and what is seen as legitimate in the organization's context at the present. The authors show "the mutual construction of organizational space and legitimacy" through legacy work, where appropriation and reappropriation of built spaces can construct or change the path of spatial legacies, while disappropriation strategies instead aims to break with past legacies.

Both Gastelaars (2010) and De Vaujany & Vaast (2014) shows how the discourse on educational practices were intertwined with the new building in the relocation of a university or part of university to new premises. Both organizations moved to a new building and framed their teaching as pedagogical innovation that could make use of the buildings' physical layout, which wasn't adapted for normal teaching methods. The intertwinement of building and discourse of modern practices was part of an institutionalization process where both organizations strived for increased legitimacy and autonomy.

Ernst (2017) conceptualized hospitals as professional hierarchical spaces and ethnographically examined the role of space in the attempt to rearrange interprofessional relations. The intention was to bolster nurses' professional competencies and increase collaboration between nurses and doctors. To achieve this, one practice was to include nurses in the doctor's morning medical report meetings. This inclusion was however not reflected in the spatial arrangements of the hospital in several ways. First, the room used for medical meetings were the doctors' spatial property, also functioning as their staff room (nurses had no staff room). Second, there wasn't enough chairs at the main table for the nurses to be seated there so they were seated in sofas in the margins of the conference room which hindered viewing screen presentations properly and separated them from the medical discussions around the table. Third, nurses were expected to move between the meeting and their respective wards when needed while doctors were only expected to be present in the meeting. In contrast, nurses' morning meetings took place in semi-public areas at the ward, was valued as less important, and could be cancelled (which was unthinkable for medical report meetings). Despite the clear division between doctors and nurses, even allowing nurses to take part of morning medical reports was a break with traditional procedures. The studied context was a newly established hospital department, and the new built department may have triggered this small break with past arrangements.

Siebert et al (2018) have studied how medical doctors experience their physical environment in NHS Scotland. They show how doctors are deprofessionalized through two features of the built environment: isolation from each other and emplacement. Through loss of separate eating and social spaces, and physical separation from support staff doctors were isolated. Through sharing offices and deterioration of facilities they were kept in place. The authors also highlight how the "reduced sense of ownership over space" had a negative impact on the professional status as well as conducting effective professional work, according to their interviewees.

Middleton et al (2020) studied the emergency department at an Australian hospital, looking at space as a mediator between macro-institutions and micro-level practices. They show how a waiting room was used to keep only slightly ill patients out of the medical staff (doctors and nurses) visual attention span, protecting medical space designated for ill or life-threatening patients from medically unnecessary stress. However, with policy ambitions to cut waiting

times, a sluice internal corridor was as a waiting room for ill patients, visually reminding medical staff that there are patients waiting, giving doctors and nurses stress as incentive to work as quickly as possible. The book chapter ends with claiming that waiting rooms and corridors can hide (exclude patients), contain (eject disruptive actors), reveal (surveillance), and remind (police deviance). While seeming to attribute agency to the built environment, the authors emphasize that they view the built environment as mediator between one the one hand institutional logics of the state and the professions, and organizational practices and patients on the other.

Public (open) spaces

This category covers a theatre, a hairdresser, a museum, and the streets. While there are areas off reach for the general public also in these spaces, the main idea is that they should be accessible for anyone.

Table 4. Empirical studies addressing public spaces.

Publication	**What space?**	**Does the paper cover the intention of the built design?**	**What is managed?**	**Who is managing it?**
Watkins, 2005	A repertory Theatre Company	No	The stage, a manuscript	Actors
Munro & Jordan, 2013	City streets, squares, cafes	No	Space	Street-artists
Shortt, 2014	Hairdresser salon	No	Work conditions, visibility	Workers
Best & Hindmarsh, 2019	Museums	No	Space	Tour guides
Nash, 2020	London's financial district	No	Rhythm	Space inhabitants

Watkins (2005) conducted participant observation at a repertory theatre company over six months. She shows how actors are constantly aware of their material surroundings and that this built aspect is well integrated into actors' job where technical prerequisites melt together with the performance.

Munro & Jordan (2013) studied a street-festival in Edinburgh and focused on the techniques used by street-artists to establish a space for their performances. They label these practices 'spatial tactics' as artists employ them to temporarily appropriate workspace in public spaces. Such tactics are for example to keep "pitches warm" by using them regularly, using movement

to generate an edge for a performance, using height, props, and the audience, as well as sound/noise/music to delimit and appropriate space. The authors also cover how the tactics of street-artists may conflict with the formally intended use of space. By establishing a temporary sense of owning space, street performances are political in questioning formal spatial ownership and challenge such arrangements through tactics. One example is how street artists make use of borders in this sense. They may perform an act on land formally owned by one part (a public space) and place their audience on semi-private land, and simultaneously claim that they cannot help where people position themselves, they are just doing their thing.

Shortt's (2015) article covers the work of hairdressers at five UK salons. While intentionally organized space is conceptualized as "dominant", this paper focuses on the liminal spaces. Shortt (2015) argues that the ways in which liminal spaces are used transform them into transitory dwelling spaces rather than being liminal. She shows how hairdressers use liminal spaces to hide, as informal staffrooms, for inspiration and relaxation, for conversation and for privacy. As privacy away from customers' view is essential to the hairdressers, this paper not only contributes by showing how hairdressers make use of liminal spaces but also encourages other researchers to ask from whose gaze space users are hiding from in this spatial usage.

Best & Hindmarsh (2019) have analyzed the work of tour guides in two UK museums. They focus on how tour guides manage space during tours. The authors scrutinize the movement, pace and positioning of the tour guides in their interplay with tour participants to accomplish tours, emphasizing the interaction with, and the dependence on, participants in spatial work.

Nash (2020) performed a rhythmanalysis of "City of London" – London's financial district. She aimed to grasp the mood and atmosphere of the district by experiencing rhythms; polyrhythmia (parallel rhythms), eurythmia (repetition, harmony) and arrhythmia (disordered rhythms). As the City of London is so dominated by the financial sector, Nash argues that people fall into the same rhythms. The place is all about work, there are no schools, cinemas, parks or hospitals, and the weekly rhythm is clear. Streets are used as office corridors' people call out to each other, greet and shake hands in the middle of the street. All activity occurs Monday – Saturday which is reflected in the intensity in the soundscape, and Sundays are extremely peaceful as no one is in. The interviewees says that the district has its own rhythm and that they must keep up. While Nash claims her contribution is primarily methodological, her study also shows how spaces can be reproduced through rhythms.

Structure and agency in organizational spaces

The reviewed literature highlights open or public spaces to entail the largest preconditions for people to exert agency. In squares and streets, space users are less steered by the built and rather uses it to produce temporary space for themselves or reproduce places through participating in it. In semi-public spaces, the dominant built environment often seems more hindering than enabling. Space users use the built to create space that contrasts the intended use or by appropriating informal, unorganized spaces. Non-public spaces are extremely limiting when it

refers to prisons, and also very limiting when referring to offices but may entail substantial agency when referring to workers' homes, depending on the character of the work.

There is less agency in the main non-public space's offices, factories, and prisons than in semi-public spaces. Space users are more emplaced in offices, factories, and prisons. When open plan offices are introduced, more freedom to move can be expected but as previously explained, the agency was in Barth & Blazejewski's (2023) study enacted by managers mainly while other employees claimed that they were more controlled through the social patterns that emerged in the open office. The spatial agency was limited to personalization of the workspace in offices and slightly shifted practices in the Dutch prison as showed by the study by Kenis et al (2010) presented earlier. What in Kenis et al's (2010) paper is presented as 'new' practices seems like old practices – traditional prison work, which the building couldn't break with. Rather than 'new' creative practices, correctional experience and knowledge was applied with the new building. So, a change in physical premises triggers the need to develop practices by applying previous knowledge and experience, it triggers the competence among space users. Due to the confined nature of these spaces, resistance to the spatial regimes was manifested in identity, humor, and other micro-level practices that didn't alter the built environment. But it seems clear that the built environment couldn't break with the organization's modus either.

In semi-public spaces, there is more movement by space users. In hospitals and universities space users as well as citizens, patients, and students generate flows. The professional enactment of liminal space, such as using it for informal conversations and other things that doesn´t fit the plan, seems instrumental for the operations of many organizations. This leads to calling for planners/designers to plan for liminality or include it in planning. However, this produces the paradox of 'designed liminality', when liminality is designed, it isn't liminal anymore. So, to plan for liminality must not be made explicit – designers cannot say: this is your liminal space to use for informal stuff, because then it becomes formal.

Buildings like office spaces and similar, open spaces, often seek to integrate professionals from different professions, workers from different departments, patient care through flows, and bring units together. In contrast, disciplinary institutions aim to divide, separate, and control units. However, in both settings spatial work seems to refer to protecting or creating space for oneself.

Conclusions

The organizational space literature is a theoretically informed research trajectory, dominated by interpretive and critical social theory, and the work of Henri Lefebvre in particular. Often drawing on his notion of the ongoing production of space at different levels, and by different actors, organizational space scholars have suggested various illuminating concepts for describing different kinds of spaces. There is also a clear presence of articles that look at the communication of buildings. The focus is brought on by a theoretical interest in symbolic communication, meaning-making, and interpretative approaches. Central to the literature is a structure-agency debate that discusses if, and in what ways, the built environment produces

social behavior. In this review, I connected with this debate in the analysis of empirical studies by discussing structure and agency in relation to the degree of publicness of a space.

Methodologically, the organizational space literature leans on historical and ethnographic inspired approaches. Reviewing a sample of studies, I have identified two dilemmas for the organizational space scholar. First, while the organizational space literature constantly searches for new and innovative techniques to study spaces, this also reflects the issue that socio-material interplay is difficult to grasp. Second, while organizational space may not be best presented in text, that is the main media used by scholars to publish their studies. These dilemmas also bring opportunities for further development of methods and forms of publication.

From a managerial perspective, the built environment is used to steer organizations, regarding internal as well as external considerations. A conclusion is that many different features of organizations can be addressed through the built environment. Communication, flows, professional integration and others are all objects of management. For other space users, often workers residing in organizational space, the priority is to shape or create space to cope with the limitations of the built environment. Spaces often limit psychological and emotional release, as well as complicate the resolution of work tasks and make relations more difficult. I have above argued that the level and type of agency of space users vary with the type of space inhabited.

It is clear that the built environment is a core feature of management and organizing, but there is no coherent understanding of what management by the built environment is. In the concluding discussion, I lay out a few aspects of relevance to scholars interested in dissecting what management by the built environment may entail.

There is support in theoretical and conceptual arguments, as well as empirically, that the built environment is used for managing organizations in various ways. There is however no overarching take on defining what management by the built environment is. I suggest that management by the built environment can be better understood if it is specified by looking at how, who, and what.

First, to look at the techniques used for management by the built environment. Here, there are examples of direct steering of flows, steering of the internal structure through emplacement and access to spaces, steering of norms through communicating through symbolic meaning of the built or aligning the built with a specific discourse. This review has mapped several such built management techniques.

A second approach is to look at who is managing. Planners, architects, and managers are often lumped together without specification of the managerial level in question or digging into the interplay between these actors and levels. There may be different approaches to space used by lower-level management of daily operations, middle managers responsible for budget and implementation, and senior or strategic management handling big decisions. These different groups also have different audiences. While planners maybe be accountable towards politicians,

architects may be mostly concerned with pushing a construction that impresses other architects or politicians. Senior managers may be mostly concerned with external relations towards shareholders and the general public, while other managers are more concerned with internal operations of different kinds. Specifying the managing actors is therefore an important task for future research on management by the built environment.

Third, specifying what is being managed would provide clarity. It is often not clear if space is the objective of management, or the means for achieving something else, possibly because it is both. Despite this intertwined nature of management objectives and means, it may be analytically useful to try to flesh out what the explicit intentions are and when spatial concerns are an implicit part of management. In short, specifying the who, the how, and the what of management by the built environment is important for a thorough empirical analysis.

The organizational space literature demonstrates how space is intertwined with organizations´ structure, culture, processes, practices, professionals, power relations, meaning, communication, and legacy. As well as space is produced by organizations, space also produces organizations. The built environment affects organizations in so many ways that it could be argued that management is always material.

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