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**Open syntaxes:
Towards new engagements with social sciences and humanities**

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Pages: i-v



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Like many highly specialised academic fields, space syntax can sometimes seem like a self-contained world to those from other disciplines. This is particularly true for those coming to space syntax from the humanities and social sciences who are more likely to find its theoretical endorsement of scientific objectivity and strong methodological emphasis on computational analysis and visualisation alien to their own disciplinary approaches, certainly compared to those coming from the natural sciences. With this in mind this special edition of JOSS¹ seeks to help initiate a critical discussion about the theoretical basis of space syntax by encouraging a dialogue with other theoretical approaches current in the humanities and social sciences. It also seeks to encourage interdisciplinary dialogue that explores not only how space syntax has informed other disciplines but also how other disciplines (including those represented here: human geography, phenomenology, philosophy, sociology and archaeology) can contribute to the articulation of space syntax as a research domain at a genuinely interdisciplinary nexus.

A tradition of engagement between different disciplines has been characteristic of space syntax research since the publication of Hillier and Hanson's seminal text *The Social Logic of Space* in 1984. While this special edition of JOSS supports the intellectual process of translating the broad interdisciplinary recognition of space syntax into new research and theoretical statements we do not regard interdisciplinarity as an end in itself. The scope of space syntax research has been advanced as much by developments within the established parameters of the field in architecture and built environment research, as it has externally in dialogue with other disciplines. It is, nonetheless, worth raising the question as to whether the theoretical cohesion that is an undoubted strength

of space syntax research might also constitute a possible limitation of the field if it leads to a narrowing of the research agenda. To avoid this scenario it is important that foundational works such as *The Social Logic of Space* and *Space is the Machine* should continue to be treated as key steps in an ongoing intellectual enquiry open to modification and criticism, rather than, in any sense, as 'closed' texts.

In making this argument we are not, of course, advocating some naïve separation between theoretical development and empirical application, that is, in any case, quite alien to the traditions of space syntax research. Several papers in this special edition (notably by Lasse Liebst, p.49-60) make it quite clear how empirical work is equally implicated in theoretical development. Nevertheless, it remains the case that *The Social Logic of Space* and *Space is the Machine* are ambitious attempts to establish space in social theory and this ambition, we suggest, requires development through a broad range of intellectual enquiries developed in different research contexts. We believe it is important in this respect to resist reductionist definitions of space syntax as a design 'tool' as advanced, for example, by Edward Soja at the Atlanta Symposium in 2001.² This should not be taken to imply any criticism of those who apply space syntax techniques successfully to pragmatic questions of architectural and urban design – and who, in any case, do so on the basis of space syntax theory.

Space syntax is rightly proud of having broken the paradigm of architectural research premised on 'man first' or 'environment first' – brilliantly satirised by Hillier and Leaman in 1973 as two 'mutually exclusive' epistemologies talking past each other in an intellectually untenable marriage of convenience.³ Over 40 years on from the publication of this paper and as participants in what has since become a mature academic research field, it is im-

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¹ The call for papers can be reviewed on the JOSS website <http://joss.bartlett.ucl.ac.uk/journal/index.php/joss>

² Soja, E. W. (2001), 'In different spaces: Interpreting the spatial organization of societies'. In: Peponis, J., Wine- man, J. and Bafna, S. (eds.), *Proceedings of the Third International Space Syntax Symposium, Atlanta, U.S.A.: Georgia Institute of Technol- ogy*, p.1.3.

³ Hillier, B. and Leaman, A. (1973), 'The man-environ- ment paradigm and its para- doxes'. In: *Architectural De- sign*, Vol. 78 (8), p.508.

portant that space syntax researchers should take the lead in the reinterpretation and development of that kernel of thought which is, to quote from Sara Westin's article in this special edition, 'new – indeed revolutionary' – about space syntax. This project, we argue, requires ongoing critical engagement with emerging theoretical perspectives from the social sciences and humanities, several of which are introduced in the contributions to this special edition of JOSS, as well as with the core theory.

We were very gratified by the positive reaction to the 'Open syntaxes' session convened by the guest editors at the recent *Tenth International Space Syntax Symposium* in London, July 2015 (with different papers presented from those included in this special edition).⁴ There was widespread agreement with the panel from audience members that conversations of this kind were needed (which is *not* the same as saying everyone agreed with our own suggestions as to the direction they should take!) One interesting discussion addressed the question as to whether there is a need, as we maintain there is, to rebalance the methodological refinement of space syntax with increased theoretical effort and sustained interdisciplinary engagement with competing social theories.

A particular case illustrates what is at stake in such engagement. The recent 5th edition of *The Dictionary of Human Geography* (edited by Derek Gregory and colleagues) includes a dedicated entry for space syntax.⁵ Given the problems the physical dimension of space presents to human geography and the frequent *a priori* rejection of quantitative approaches since its social turn in the 1970s, this is something of an achievement in its own right. It is worth, however, paying closer attention to this 'interdisciplinary event', since it says something of how space syntax is sometimes perceived by adjacent disciplines.⁶ The definition of space syntax as a 'mathematical tool' in highly pragmatic terms devoid of its theoretical dimensions raises issues

relevant to the themes of this special edition of JOSS. Why, for example, is space syntax being seen as a technique of spatial analysis rather than as a sociospatial theory, a theory of architecture or a theory of the city? Why is the social and anthropological richness of the theory completely absent in such definitions? Indeed, where is space syntax as a *theory* and what is the relationship between space syntax as theory and as practice? Of course, such a caricature of space syntax is *not* typical of its reception in other disciplines but neither is it entirely uncommon.⁷ Before such views are dismissed as misguided it is worth reflecting on why they recur.

Rising to the epistemological challenge of interdisciplinarity, we believe, requires some critical reflection on the syntactic emphasis on representation. One might reasonably ask whether the understanding of space in space syntax, at least at the urban scale, can be rather conventionally expressed and contained by the axial line and analogous representations. While we certainly do *not* agree with Soja or Gregory *et al* that syntax only describes surface appearances, a reluctance to articulate its own normative orientation as a social theory of space arguably blunts its wider reception. Is there, for example, a specifically syntactic critique of the neoliberal city, should there be? Research in this area may involve less foregrounding of representation in order to develop space syntax theory as an ethical proposition on architectural and urban questions. We are certainly not suggesting that there is a necessary conflict between such an aim and research that applies or develops methods of syntactic representation other than to note that, as simplifications of reality, representations serve particular analytical purposes framed by research and practitioner contexts that are not value free. For example, the extensive representation of integration 'accessibility' analyses in urban-scale research arguably privileges that part of space syntax theory that asserts movement as being 'natural', and in that

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⁴ The session took place on Tuesday 14th July 2015, see <http://www.sss10.bartlett.ucl.ac.uk/programme/> [Accessed 29th September 2015].

⁵ As alluded to by Sara Westin in *The Paradoxes of Planning: A Psycho-Analytical Perspective*, Farnham: Ashgate, 2014, p. 148.

⁶ **Space syntax.** An approach to studying the spatial structure of cities using mathematical tools to describe their complexity. [...] Such representations, using maps and graphs as well as numerical indices, allow the city's 'navigability' to be assessed – how easy is it to move about and to get from one point to another? – with techniques that can be applied at any scale (how easy is it to get around an airport terminal, for example?). Using their syntactical representations of the urban built environment, workers at the Space Syntax Laboratory at the Bartlett School of Architecture, University College London have studied commuting and other movements, linking flows to the urban structure and thereby providing means for predicting future traffic patterns and transport system demands.' [Gregory, D., Johnston, R., Pratt, G. Watts, M. and Whatmore, S. (eds) (2009), *The Dictionary of Human Geography* 5th edition, Chichester: Wiley-Blackwell, p. 710.]

⁷ Human geography is challenging disciplinary territory for space syntax for some of the reasons Sara Westin explains in her article. By contrast the positive contribution of space syntax to archaeological research is readily

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⁽⁷⁾ acknowledged within the discipline, see Hanna Stöger's article (p.61-80).

sense, 'good'. One legitimate response to this claim would be to assert that such a simplistic normative association is not supported by space syntax theory and practice. Another response, we believe equally valid, is to raise the question as to whether presenting the city as a 'natural' system with its organismic connotations of the properly-working body does not itself carry implicit normative associations of what the 'properly-working' body (i.e. city) is and, equally, is not. Who is to judge, for instance, what constitutes urban 'malaise'? Certainly we believe a response to such questions needs to be rehearsed if the political and ethical dimensions of space syntax are to be developed.

In this special edition the guest editors hope to help catalyse a broader debate on the boundaries of space syntax, its connections with other fields in the social sciences and humanities, and identify potential areas for future substantive and theoretical development. This is why this special edition was proposed as a forum for *open syntaxes* (decidedly in the plural). We are pleased to say that the six articles and two Forum contributions presented here meet the challenges of our original ambition.

In her article, Sara Westin ('To know is to know one's geometry' – Reflections on the problem of inference in space syntax from the viewpoint of a human geographer', p.1-18) explores the contrasting theoretical traditions of space syntax and human geography to develop a critique of urban planning discourse and practice. Drawing particularly on the work of the Gunnar Olsson, she explains why the fundamental proposition of space syntax theory that social processes in cities can in part be explained through the formal properties of urban space raises the 'problem of inference' for human geographers, who would argue the inverse position to be true. Westin does not claim that a resolution to this debate is possible or even desirable. Rather she argues that acknowledging the problem of inference should not be regarded as justification for the theoretical 'other-

ing' of space syntax by human geographers but as a first step towards a more productive theoretical engagement.

The environmental and architectural phenomenologist, David Seamon, has a longstanding interest in space syntax theory and methods and has made a number of important critical interventions over the years. Seamon ('Understanding place holistically: Cities, synergistic relationality, and space syntax', p.19-33) advocates a holistic understanding of urban place as being more than the sum of its parts. He identifies the development of this perspective as an important possible contribution of space syntax theory, but one poorly served by the conceptual vocabulary of systems theory with its prioritisation of what he terms 'analytical relationality' over the more synergistic relations of place. In response, Seamon advances 'synergistic relationality' as a conceptual schema better able to describe the essential wholeness of place and resist its analytical decomposition into a series of apparently disconnected domains.

Frederik Weissenborn's article ('After structure: Expression in built form', p.34-48) presents a critique of what he regards as the problematic epistemological join between morphogenesis in structuralist anthropology (i.e. according to social rules) and architectural morphogenesis (i.e. according to autopoietic rules) in Hillier's theory of the inverted genotype. To address this, Weissenborn presents a rethinking of morphogenesis in space syntax theory derived from the materialist-expressive philosophy of Spinoza. Such a theoretical grounding, he argues, is better placed to articulate the far-reaching implications of space syntax as a social theory.

Lasse Liebst is a sociologist whose work engages with space syntax theory broadly within the Durkheimian tradition, which had such an influence on Hillier and Hanson. In his article ('Phenomenology of the movement economy: A multilevel analysis', p.49-60) Liebst notes that the space syntax theory of the movement economy is rather better

understood in the literature as an economic theory, than it is as an experiential phenomenon. Making reference to research in the sociology of interaction and encounter, Liebst seeks to redress this imbalance by exploring the extent to which movement attraction is also associated with 'positive place experiences' through an empirical case study of a neighbourhood in Copenhagen.

Hanna Stöger is an archaeologist who has made extensive use of space syntax in her research into life in the ancient Roman port city of Ostia. Here ('Roman neighbourhoods by the numbers: A space syntax view on ancient city quarters and their social life', p.61-80) she presents work in which space syntax methods are brought to investigate the formation of neighbourhood and community in Ostia. Stöger's contribution is valuable not only in the reflective approach she brings to the application of space syntax in archaeology but also because her work exemplifies how careful and critical development of syntactical methods can itself reveal theoretical and epistemological insight by allowing the established archaeological record to reveal new insights about the everyday dynamics of social life in past cities.

Continuing the theme of interdisciplinarity, this time from inside the field of space syntax research as it were, 'looking out', Nadia Charalambous and Ilaria Geddes's article ('Making spatial sense of historical social data', p.81-101) presents a detailed study of the historical development of Nicosia, Cyprus, as an ethnically and religiously diverse urban community. This research required the compilation of a variety of non-standard historical datasets in order to identify trajectories of historical change and the shifting patterns of social and spatial arrangements that are important in understanding the contemporary city. Notable in the context of a largely empirical syntactical study is how the authors reach out to theoretical influences beyond space syntax.

Since its inception JOSS has featured contributions from many thinkers pre-eminent in their

fields including Bill Hillier, Mike Batty and (in the non-thematic section of the current edition) John Peponis. In this Special Edition of JOSS we are delighted that Nigel Thrift (human geography), cognitive geographer Juval Portugali and physicist Hermann Haken (synergetics and complex systems) accepted our invitations to present short pieces to the Forum section. The guest editors asked that these pieces should present an idea that would help provoke debate and open dialogue between their respective fields and space syntax. Nigel Thrift ('The weight of the world', p.102-103) offers an intriguing meditation on the space syntax as a particular kind of vocabulary 'both a language of spatial configuration and a spatial configuration of language' (p.102) as he puts it. Portugali and Haken ('Preliminary notes on synergetic inter-representation networks (SIRN), information adaptation (IA) and the city', p.104-108) present the outline of an integrated model of complex urban processes that extends to both the internality and externality of these processes and the dynamics of informational change. Both the Forum contributions highlight the possibilities of new research spaces where space syntax researchers might productively work with those from other, non-related, specialisms.

Three articles in the non-thematic section complete this Issue: 'Syntax and parametric analysis of superblock patterns' (p.109-141), co-authored by John Peponis, Chen Feng, David Green, Dawn Haynie, Sung Hong Kim, Qiang Sheng, Alice Vialard and Haofeng Wang; 'Urban morphology and syntactic structure: A discussion of the relationship of block size to street integration in some settlements in the Provence' (p.142-169) by Lisa Lim, Tianren Yang, Alice Vialard, Chen Feng and John Peponis; and Mark David Major's 'The invention of a new scale – The paradox of size and configuration in American cities' (p.170-191).

We would also like to thank Frederico de Holanda and Daniel Koch for their contributions in the

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Book Reviews section, bringing us their impressions on Fran Tonkiss' *Cities by Design – The Social Life of Urban Form* (p.192-194), and on *Media Technologies: Essays on Communication, Materiality, and Society* (p.195-197), edited by Tarleton Gillespie, Pablo Boczkowski and Kirsten Foot.

Finally, the editors would like to thank the Editor of JOSS, Sophia Psarra, for her support of this special edition, the JOSS editorial team of Falli Palaiologou and Ella Sivyver for their hard work and attention to detail, and the reviewers. A personal 'thank you' also extends from the guest editors to all the authors to this special edition for their interesting papers and patience with the editorial process. We hope you agree that they have all contributed to making this what we believe is an exciting and timely special edition of JOSS.

Sam Griffiths and Vinicius M. Netto
Guest Editors