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Editorial

Introduction: Toward a "Post-Alexandrian" Agenda

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Abstract

Christopher Alexander, who died in March 2022, was undeniably one of the most influential, if sometimes controversial, urban thinkers of the last half-century. From *Notes on the Synthesis of Form*, his first book and Harvard PhD thesis, to the landmark "A City is Not a Tree," to the classic best-sellers *A Pattern Language* and *The Timeless Way of Building*, to his more difficult and controversial magnum opus, *The Nature of Order*, Alexander has left a body of work whose breadth and depth is only now coming into view. Yet Alexander's legacy is also the subject of intense debate and critique within the planning and design fields. This introduction provides an overview of the thematic issue of *Urban Planning* titled "Assessing the Complex Contributions of Christopher Alexander." Its purpose is to provide greater clarity on where Alexander's contribution is substantial, and where there are documented gaps and remaining challenges. Most importantly, the thematic issue aims to identify fruitful avenues for further research and development, taking forward some of the more promising but undeveloped insights of this seminal 20th-century thinker.

Although this thematic issue is titled "Assessing the Complex Contributions of Christopher Alexander," it might well have been titled "*Further Developing the Complex Contributions of Christopher Alexander: An Introduction.*" Each of the authors herein takes forward some of Alexander's ideas into new topics exploring new connections, and each thereby lays out parts of a potential "post-Alexandrian" agenda for further research and development. In so doing, they give us tantalizing glimpses of much more that can be done.

Already we have seen an astonishing range of further developments of Alexander's ideas: into the realm of software and pattern languages of programming; into open-source technology, wiki, and Wikipedia (built on an innovation to share pattern languages of programming); into organization theory and Agile project management (whose founders acknowledged an explicit debt to Alexander); and into a dizzying number of other

fields. It seems very likely that such innovations will continue apace.

Curiously, the one field where innovations have lagged conspicuously has been Alexander's own field of architecture and urban planning. The reasons for that are surely varied: the iconoclasm of Alexander's work, off-putting to more mainstream practitioners; the "classic" status of the books and their cult-like veneration by some, suggesting that further work would be "tampering"; the unwillingness of adherents (even Alexander himself) to see potential relationships with other investigators, and potential cross-fertilizing collaborations; the hubris of architects, whose "creation" mystique forecloses the possibility of sharable normative structures; and the rapacious nature of the modern real estate development system.

Alexander himself offered some tantalizing ideas about how to change this state of affairs. In his last

book, *The Battle for the Life and Beauty of the Earth,* he confronted the current "business-as-usual" system of urban development, which he termed "System B," and he argued that it is fundamentally incapable of creating human environments that are truly supportive of life and human flourishing, in any enduring or sustainable way. As an alternative way forward, he proposed nine "ways of working" that are more consistent with what he termed "System A"—a more adaptive, evolutionary process of growth that is more aligned with biological dynamics, and more able to produce the richly complex characteristics of human history and cultural traditions (Alexander et al., 2012). However, his recommendation was not at all to "go back" in any sense. On the contrary, he proposed to go forward, into another kind of future: one that has more fully integrated the lessons of nature and evolution into its systems.

In his magnum opus of 2003, *The Nature of Order: An Essay on the Art of Building and the Nature of the Universe,* Alexander outlined this hopeful future:

> People used to say that just as the twentieth century had been the century of physics, the twenty-first century would be the century of biology….We would gradually move into a world whose prevailing paradigm was one of complexity, and whose techniques sought the co-adapted harmony of hundreds or thousands of variables. This would, inevitably, involve new technique, new vision, new models of thought, and new models of action. I believe that such a transformation is starting to occur….Our future, as we begin to see it now, contains a vision of an entirely new kind of human process: A process, like the process of biology, which is attuned to human nature, makes more sense of human feeling and human common sense….We know that it must be possible on theoretical grounds. We know it because this is the process by which the biological world of plants and animals has already been created. Late 20th-century research on complex systems by Holland, Kaufmann, and others, showed how very complex systems with enormously rich and complex state-space have been built up, repeatedly, throughout biological history, by the process of unfolding, and by small structure-preserving processes, which go step by step, yet reach astounding results in the whole….The fundamental process and the structure-preserving unfolding process—these are things that belong to a visionary future for humankind—a future in which complex structure of the built world, its daily re-creation, its daily nurture, will be considered normal. It is this far-distant future—hardly yet contemplated—which I have been looking for the last thirty years. To be well, we must set our sight on such a future…. (Alexander, 2003, pp. 568–570)

This, then, is Alexander's agenda: to realign our systems to produce more adaptive, more coherent, more whole environmental structures. But the reconfiguring of our planning, design, financial, legal, and other myriad systems that together determine what is built and where—what we might call our "operating system for growth"—will surely be an immense task. It will require large numbers of people working on a wide range of problems, doing research and development, implementation, experimentation, adaptation, and transformation—exactly the kind of process that Alexander described. And that is the process described in part by the authors of this volume.

In his commentary, "Christopher Alexander as an Architectural Thinker," Almantas Samalavičius (2023, p. 153) takes up the question of why Alexander has not been more carefully assessed within the mainstream of contemporary architectural discourse "despite his original, important, and lasting contributions to the field." "Alexander consciously distanced himself from his peers and the mainstream doxa," Samalavičius notes, "enabl[ing] him to bypass the influence of architectural modernism, pursue his goals without falling prey to this architectural ideology, and develop his own (oppositional and meaningful) ways of seeing architecture and the built environment" (Samalavičius, 2023, p. 155). But his legacy might be better sustained, Samalavičius (2023, p. 155) concludes, by further developing some of his most promising ideas and concepts, and "patiently drafting and implementing new educational programs (e.g., Building Beauty) rather than debunking criticism."

Ruihua Chen et al. (2023) assess the state of pattern language practice in their article "Navigating Approaches to the Use of Pattern Language Theory in Practice." They find that application of pattern language theory "differs across four components: artefact, activity, roles and tools, informed by practitioners' diverging values and needs" (Chen et al., 2023, p. 156). They report on the development of a set of conceptual tools that aim to support applications of pattern language theory, employing an "activity kit" that has been applied in a Dutch housing renovation project to support homeowners in communication and decision-making, with promising results.

In his commentary, "Community and Privacy in a Hyper-Connected World," Roderick J. Lawrence (2023) takes up Alexander's first co-authored book from 1963, with his colleague and mentor Serge Chermayeff, *Community and Privacy: Toward a New Architecture of Humanism*. Lawrence finds it to be newly relevant for today's hyper-connected, globally networked age. He notes that we have failed to recognize the significance of healthy boundaries between public and private realms, an essential (if somewhat paradoxical) ingredient in their capacity to provide the vital connectivity between public and private. This is especially urgent now in the wake of the Covid-19 pandemic, Lawrence (2023, p. 169) argues, when we need to re-formulate "the spatial organization of domestic architecture that can support and sustain choices about private and public life in a world of global networks, intrusions of social media, and

increasing video surveillance that challenge our autonomy and privacy.''

In the spirit of connecting and reconciling Alexander's work with others', Ngoc Hong Nguyen et al. (2023) take on Leslie Martin's insights on grid patterns, not as relentless top-down structures but as generative frameworks for organic growth. Their article, "A Grid Is Not a Tree: Toward a Reconciliation of Alexander's and Martin's Views of City Form," uses Abu Dhabi as a case study. They find that "overlap, order, and adaptability can coexist in gridded street network," and "a fine-grain scale of the grid plays a critical role in supporting the quality of urban space" (Nguyen et al., 2023, p. 172).

In his commentary, "The Structure That Structures Us," Jaap Dawson (2023) reflects on the emotional and transcendental qualities of Alexander's work, with an intriguing focus on the link between Alexander and psychologist C. G. Jung. Dawson points out that Jung explored the meaning of mandalas as reflections of the psyche or soul, and he sees a similar pursuit for Alexander: as Alexander himself put it, toward "works which have consciously, and deliberately been created as offerings to God, as pictures of the universe, or of something that lies behind the universe . . . as pictures of the human soul" (Alexander in Dawson, 2023, p. 186). Dawson (2023, p. 187) concludes that "we need more than a checklist of an ideal design….We need to reconnect with the structure that structures us. And then we can build a world that embodies that living structure."

Ridvan Kahraman (2023) assesses the challenge of moving beyond geometrical states into structuring processes in Alexander's theories, extending the analysis of centers and wholeness further into the realm of events. In the article, "Centers in the Event Domain: A Retake on the Wholeness of Urban Spaces," Kahraman focuses on the qualities of public spaces in particular, using a case study from Stuttgart, Germany. His research concludes that "utilizing Alexander's theories from an event-first rather than a geometry-first perspective is an approach especially well-suited for public spaces" (Kahraman, 2023, p. 188).

In "A World of a Thousand Independent Regions: Confronting the Ever-Increasing Refugee Problem," Hans Joachim Neis and Pamanee Chaiwat (2023) take up Alexander's work in the contemporary context of climate change, nuclear danger, pandemics, overpopulation, and refugee crises. Their primary subject is the first pattern from *A Pattern Language: Towns, Buildings, Construction*, titled "Independent Regions." They note that although this pattern may seem to be focused on regional autonomy, it is actually focused on the wholeness of each constituency of a healthy and peaceful global society. Using the microcosm of a refugee settlement, they propose a "refugee pattern language," which includes a minimum complement of the elements of governance and informality to promote cohesion and resilience. By contrast, global systems are overdependent on "ever larger countries with hegemonial or world domination ambitions" resulting in global instability and destructive outcomes, including refugee crises (Neis & Chaiwat, 2023, p. 209). By contrast, "this proposal tries to proceed in the opposite way by emphasizing the scale of human living within an entity that people can understand and govern well by themselves" (Neis & Chaiwat, 2023, p. 209). The authors conclude that "the relevance and vision of this concept and pattern are probably most visible and needed in the current turmoil of a transforming world" (Neis & Chaiwat, 2023, p. 201).

A related application of Alexander's work to more contemporary global challenges is explored in "The Pattern Language Approach as a Bridge Connecting Formal and Informal Urban Planning Practices in Africa," by Priscilla Namwanje et al. (2023). Using a case study of a wetlands management pattern language in Kampala, Uganda, the authors explore the value of pattern language methodology utilizing both informal patterns (derived from and with the residents of informal settlements) and formal patterns (derived from more technical and institutional sources). In so doing, they seek to transcend the colonial legacy of a "dual city," with "formal and informal communities using resources and spaces differently, leading to spatial segregation and non-implementation of urban plans" (Namwanje et al., 2023, p. 212). The authors conclude that "using the pattern language approach as a tool to understand informal practices and their possible incorporation into a planning process that captures the needs of citizens, this research offers relevant insights into achieving sustainable and inclusive urban environments" (Namwanje et al., 2023, p. 212).

Tarina Levin et al. (2023) take up Alexander's difficult and somewhat controversial concept of "living structure" within human environments, anchoring it more firmly within the existing literature in their article "Social Sustainability and Alexander's Living Structure Through a New Kind of City Science." In particular, the emerging "science of cities" does contain many parallels to Alexander's work, notably the understanding of complex adaptive systems, including biological systems and their dynamics. A more philosophical parallel is in the understanding of life as an emergent phenomenon latent in the physical world, an insight close to Alexander's own ideas about the capacities of spatial regions to support—or perhaps manifest, in a primordial sense—life. The issue is one of health of cities, people, and planet.

One of us (Mehaffy, 2023) also contributed an article on further development of Alexandrian ideas, notably by combining Alexander's work on pattern languages, geometry, and generative processes. The article, "Patterns of Growth: Operationalizing Alexander's 'Web Way of Thinking,'" presents a number of new projects in pattern languages, wikis, and related areas, with case studies from a number of ongoing and expanding international consulting projects. The article finds evidence that such a synthesis offers very promising practical methods for actual implementation at the project level.

Finally, Alice Rauber and Romulo Krafta (2023) take forward one of Alexander's last and most advanced research efforts: a collaboration with colleagues at the University of York to develop "harmony-seeking computations." As Alexander described the effort:

> We are trying to build a computer model of wholeness in a given thing, so that one can then see if the computer can be instructed to find the latent centers in a given configuration….Even if we succeed in a rudimentary form, it will be very important….I think for an odd reason. And that is that if we can find algorithms which do that, it's not that that process will then be computerized, but more, it will be possible to tell people what the search for the latent centers really is. (Sustasis Collaborative, 1:08:25)

Rauber and Krafta's (2023, p. 246) article, titled "A Quanti-Qualitative Approach to Alexander's Harmony-Seeking Computations," describes "a way to tackle complexity" by developing a harmony-seeking model of urban design. The model identifies subsets of spatial, functional, and cognitive elements, each of which consists of characteristic sub-subsets (public spaces, built forms, mobility systems, interactions, and information units, including Lynch's paths, nodes, edges, districts, and landmarks). These are represented within graphs, which are then optimized using network analysis techniques. Although the authors find that "more empirical works are needed to verify the correlation between graph-based measures and real phenomena," they find promise in what they conclude is "a reasonable way to operationalize the HS [harmony-seeking] process in a design context since it allows the depiction of various global patterns related to different aspects of urban design" (Rauber & Krafta, 2023, pp. 256, 254).

These and other works demonstrate that Alexander's complex contributions are indeed being taken forward by a growing number of collaborators in a growing number of fields, with renewed energy in the disciplines of the built environment. Indeed, the remarkable work already completed suggests an exciting frontier—or multiple frontiers—await.

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Conflict of Interests

The authors declare no conflict of interests.

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