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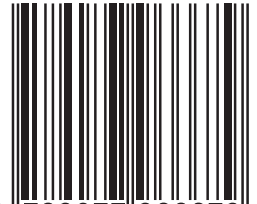
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SPRING WAS IN THE AIR, A SENSE OF CHANGE AND RENEWAL. MIGRATING BIRDS WERE GETTING READY FOR THEIR GRAND TOUR, NATURE WAS RETREATING. TEMPERATURES WERE STILL MILD, CONSIDERING THE SEASON AND MAYBE THAT HELPED. ALL AROUND THE GLOBE PROTESTS WERE HEARD, PEOPLE CLAIMING THEIR RIGHTS. MUFFLED BY FACE MASKS THE SOUND WAS NOT AS LOUD AS IN ORDINARY TIMES, BUT THE MESSAGE WAS CLEAR ENOUGH: THINGS HAD TO CHANGE.

THE PROBLEM WITH CHRISTOPHER ALEXANDER MOLLY WRIGHT STEENSON

“You can’t. You can’t possibly”, Michael said to me at the conference dinner. “What! No!” Sabine said, overhearing Michael. “You can’t be serious.” “Why not?” I asked. “Well, if you have to write about him, make him the bad guy”, she said.

It was 2015 and I had just told two architectural historians that one of the chapters of the book I was writing was about Christopher Alexander. I was looking at Alexander’s early influences – including artificial intelligence, cybernetics, and Gestalt psychology – and how Alexander in turn influenced programmers, software developers, and digital designers. *Architectural Intelligence: How Designers & Architects Created the Digital Landscape* (MIT Press, 2017) included chapters about him, Nicholas Negroponte and the Architecture Machine Group, Richard Saul Wurman, and the information architects and technologists who took up Alexander’s work.

Let me say this up front: I am an unintentional defender of Christopher Alexander.

I defend him against architects who have barely read his books but hold disdain for him and even hate him. I warn programmers and user experience (UX) designers not to worship Alexander, and to be critical about his universalizing theories, especially in his more recent work. And yet, I feel uneasy in both of these roles because neither of them is where I want to be. Architects should understand Alexander’s influence, programmers and digital designers should critique that influence, and from where we stand in 2020, we should all be suspicious of leaning on the trope of a monolithic white male architect.

The first time I heard of Christopher Alexander was during my first day working on the Netscape website in 1996. At that time, it was the most-hit site on the Internet. As we discussed the upcoming redesign of the site, Hugh Dubberly, the creative director, suggested using the book *A Pattern Language*, written by Alexander, Sara Ishikawa, Murray Silverstein with Max Jacobson, Ingrid Fiksdahl-King, and Shlomo Angel. Developing our own pattern language would help us to design coherent pathways through the site. Patterns would help us keep rules in mind and communicate those concepts while developing a graphical language that united the paths the users would take.

WHY DO TECHNOLOGISTS LOVE ALEXANDER AND ARCHITECTS HATE HIM?

In the early days of the Web, I was one of those people who architects love to complain about, someone who had ‘architect’ in their title but wasn’t trained to design buildings. Among other titles, I was an ‘information architect’ (1997) and ‘customer experience architect’ (1999–2001) leading teams of UX designers and technologists. Information architects argue that ‘architecture’ is the right word for this structural design work, drawing from the tiny bits of data to the big, beautiful structures that support them. The concept isn’t new – one of six definitions for architecture in the *Oxford English Dictionary* derives from the design of mainframe computers in the 1960s. After a decade working at Silicon Valley based companies, in 2005 I went to graduate school in architectural history to bridge these different notions of architecture.

This is where both Alexander and artificial intelligence took up residence in my research. In Christine Boyer's tiny doctoral proseminar in 2008, I presented Alexander's *Notes on the Synthesis of Form* (1964), the published version of his 1962 dissertation. Reading the notes on *Notes* is the best way to read the book, and I walked through the footnotes and references to gather what shaped the work: Alexander was, in essence, exploring design as a system for amplifying human intelligence.

"We must face the fact that we are on the brink of times when man may be able to magnify his intellectual and inventive capability, just as in the nineteenth century he used machines to magnify his physical capacity.¹⁹ Again, as then, our innocence is lost. And again, of course, the innocence, once lost, cannot be regained. The loss demands attention, not denial."¹

In the middle of that paragraph, footnote #19 referred to the work of the early luminaries of AI and computation: W. Ross Ashby (who wrote the chapter 'Design for an Intelligence Amplifier' in a volume edited by John McCarthy and Claude Shannon) and Marvin Minsky's 1961 paper 'Steps toward Artificial Intelligence'. Minsky writes: "I believe... that we are on the threshold of an era that will be strongly influenced, and quite possibly dominated, by intelligent problem-solving machines."² He predicted the beginning of a new age of computation, one in which we find ourselves today when AI is overused to the point of cliché.

Minsky and McCarthy's names caught my eye: it was the first time I'd seen a reference to artificial intelligence from an architect. When I read that footnote in 2008, although many historians were researching cybernetics and architecture (including me, I'd written my master's thesis on Cedric Price's Generator project), they weren't researching AI. I titled my seminar paper, 'Artificial Intelligence, Architectural Intelligence'. It became a chapter in my dissertation in 2014, and then a chapter in my book *Architectural Intelligence* in 2017, an homage to that seminar paper, and really, to that footnote.

I've never quite recovered from footnote #19. That might be part of the problem.

Why do technologists love Alexander and architects hate him? I've been asking this question for over a decade, first at a lecture I gave in a bar in the East Village, and every few years since then on Facebook. Let's imagine these bullet points as PowerPoint slides.

Here are some reasons architects don't like Christopher Alexander.

- Because he is a technological determinist
- Because his architecture is ugly
- Because his books are very, very boring to read
- Because his studio at Berkeley in the 80s was miserably limiting
- Because he sued his department at Berkeley
- Because patterns are really a lot of rules, and what architect wants to be a rule follower?
- Because, as Peter Eisenman told the *New York Times* in 2003, "He got off into being cranky." Then again, Eisenman likes to be cranky. The 1982 joust between Eisenman and Alexander was a match of wits more than a debate. Eisenman won on wit, Alexander won on morals. "You're fucking up the world," Alexander said at one point. (They had more in common than either was willing to concede.)³

And here are some reasons technologists love him.

- Because his philosophy presents an upending of the politics of the design process
- Because he presents a holistic approach to design
- Because he is moral
- Because patterns look simple but they do complicated work in managing and codifying knowledge
- Because his methods are useful for design, writing, coding, architecture, and more
- Because it captures knowledge beyond the individual
- Because he is a curmudgeon and they like that, and they think he is right

In essence, architects and technologists are arguing about the definition of architecture. Architects see it as the creative endeavor of design, and Alexander's morals and rules get in the way. Technologists see architecture as the structure and ruleset for complexity, and they welcome his moralizing. For them, Alexander himself represents 'architecture': he is often the only architect they can name.

When software engineers started to use patterns to codify and share knowledge, it was revolutionary in the late 80s and early 90s, and widely picked-up for many purposes: a quick search for pattern languages on Amazon returns several hundred results, with patterns for software, games, even hypnotherapy. In Alexander's book *The Timeless Way of Building*, programmers found a politics that changed how they could design, code, and manage software. For software engineer Kent Beck (one of the first people to apply patterns to software in the 1980s, and the creator of extreme programming, the foundation of Agile programming), *A Pattern Language* and *Timeless Way* represents, "a rearrangement of the political power in the design and building process."⁴ Alexander's work influenced Agile programming and scrum methods, software engineering, and project management frameworks first developed in the early 2000s that have recently made their way into architectural studios and construction firms.

He even influenced Ward Cunningham's invention of the wiki, the format that runs Wikipedia. Alexander – who architects love to hate – influenced the tools, languages, and methods that they use every day.

For technologists, Alexander's philosophies open up new ways of designing; as one designer wrote, "The more I dive into things like social complexity, the more I find myself referencing Alexander... For me (not an architect), the stuff about stepwise decomposition of hierarchies of wholes, emphasizing relationships as you go is...well, it's relevant well outside of architecture, and it's gold."⁵

Like talking about different people with the same name, there isn't a way to bring the two conversations together.

Beyond the comments by architects and technologists, there are other comments in the Facebook thread.

One commenter says that Alexander's house was overgrown with weeds and he was in constant conflict with his neighbors. In the 90s there was even a website with low-res photographs that his neighbors built together to chronicle their complaints.

One commenter warns that he was generally rude to people, especially to women.

And a third commenter writes, "Respect his work and cite it. And know he is a raging sexist."

Christopher Alexander's lifelong project is an architecture of cosmological order. He introduces it in the epigram *Notes on the Synthesis of Form* with Socrates' definition of rhetoric in Plato's *Phaedrus*: "First, the taking in of scattered particulars under one Idea, so that everyone understands what is being talked about... Second, the separation of the Idea into parts, by dividing it at the joints, as nature directs, not breaking any limb in half as a bad carver might." His later work is better represented by the latter part of the *Phaedrus* passage. Socrates continues, himself quoting Homer, "I am myself a great lover of these processes of division and generalization; they help me to speak and to think. And if I find any man who is able to see 'a One and Many' in nature, him I follow, and 'walk in his footsteps as if he were a god.'"⁶

While this notion of order is through-line of his work from the early 1960s to the present day, Alexander jettisons many of his arguments along the way. He rejects the computers and mathematics that he used for *Notes* a year after its publication. In the two-part 'A City is Not a Tree' article from 1965, he nixes the idea of structuring design problems using a tree structure (two connections per node), arguing instead for using a semilattice (more connections). I have to admit that I love these vehement rejections, as though he's constantly breaking up with himself.

ALEXANDER CONTINUES TO PURSUE THE IDEA THAT IT IS POSSIBLE TO DESIGN SPACES THAT ARE MORAL, MEANINGFUL, AND "FILLED WITH LIFE"

"[T]he city is not, cannot, and must not be a tree. The city is a receptacle for life. If the receptacle severs the overlap of the strands of life within it, because it is a tree, it will be like a bowl full of razor blades on edge, ready to cut up whatever is entrusted to it. In such a receptacle life will be cut to pieces. If we make cities which are trees, they will cut our life within to pieces."⁷

In fact, he rejects the majority of *Notes* in its 1971 paperback edition, using the Preface to attack the Design Methods Movement.

"...I have been hailed as one of the leading exponents of these so-called design methods. I am very sorry that this has happened, and want to state, publicly, that I reject the whole idea of design methods as a subject of study, since I think it is absurd to separate the study of designing from the practice of design. In fact, people who study design methods without also practicing design are almost always frustrated designers who have no sap in them, who have lost, or never had, the urge to shape things. Such a person will never be able to say anything sensible about 'how' to shape things either."⁸

Alexander continues to pursue the idea that it is possible to design spaces that are moral, meaningful, and "filled with life", and that they can be objectively evaluated as such. He promoted this philosophy in *The Nature of Order*, his four-volume series published between 2002-04. If in *Notes* he thought that he could create a stable design system, if in *A Pattern Language* he and his colleagues believed that they could codify knowledge, then in *Nature of Order* he connects morality, consciousness, beauty, and order. In 2016, he takes the argument further, writing that the question of order and beauty is one of God – a Christian God – a perspective influenced by his lifelong practice of Roman Catholicism. He writes,

"It has taken me almost fifty years to understand fully that there is a necessary connection between God and architecture, and that this connection is, in part, empirically verifiable. Further, I have come to the view that the sacredness of the physical world – and the potential of the physical world for sacredness – provides a powerful and surprising path towards understanding the existence of God, whatever God may be, as a necessary part of the reality of the universe. If we approach certain empirical questions about architecture in a proper manner, we will come to see God."⁹

Order is walking in the footprints of the gods, and late in life (Alexander turns 84 this year) he named the god he was seeking. The connection to his earliest ideas is clear in the conclusion of the piece: "Taking architecture seriously leads us to the proper treatment of tiny details, to an understanding of the unfolding whole, and to an understanding – mystical in part – of the entity that underpins that wholeness. The path of architecture thus leads inexorably towards a renewed understanding of God."¹⁰

However, I disagree with Alexander. I do not believe that there is an empirically verifiable notion of order, beauty, architecture, and god. I believe that such an idea is dangerous. While it's a few years since he wrote the article, from where I sit in Pittsburgh in July 2020, I live in a country fully displaying authoritarian leanings on the one hand, and the heartening and meteoric rise of Black Lives Matter on the other. Why, in this moment, should anybody be writing about Christopher Alexander – a great white male with a heroic legacy who believes that the relationship between a Christian god and architecture can be empirically verified? There is not one singular, verifiable system of beauty, or architecture, or god, and I fear what would happen if there were.

If someone were to take up another historical project about Alexander, why not research his collaborators at the Center for Environmental Structure, including Sara Ishikawa, the second author on *A Pattern Language*, or the impact of the Center's work in relation to race and urbanism, whether positive or negative? These research avenues move toward de-universalizing the figure of Alexander; the solo Alexander and Christian teleology does the opposite. Instead, what if we took

forward Kent Beck's interpretation of Alexander for "rearrangement of the political power" in the design process – and then actually do that rearranging? That would be something for architects and technologists both. As Alexander wrote in *Notes* in the passage with footnote #19, "the innocence, once lost, cannot be regained. The loss demands attention, not denial."

And then there's the problem with Footnote #19.

THERE IS NOT ONE SINGULAR, VERIFIABLE SYSTEM OF BEAUTY, OR ARCHITECTURE, OR GOD, AND I FEAR WHAT WOULD HAPPEN IF THERE WERE

Footnote, thank you for introducing me to AI. You've given me 12 years of work to cover and uncover. You're even responsible, in some ways, for me becoming a research dean at an institution with some of the most consequential AI research in the world. But there's a problem, Footnote #19: Marvin Minsky. As the co-founder and director of the MIT AI Lab, Minsky held enormous power in setting the discourse for what would and would not be researched in artificial intelligence, closing doors on many potential lines of research. We are lucky, perhaps, that he was interested in architecture and AI. He died in 2016: three years later details emerged about Minsky's close relationship with Jeffrey Epstein, the donor, philanthropist, and convicted sex trafficker who committed suicide in jail. One of Epstein's victims testified that she was made to have sex with Minsky when she was 17: He was 73.¹¹ I'll make a deal with you, Architects; enough with the knee jerk reactions. Get to know Christopher Alexander's work as well as you know the other architects of his time, what it influenced, and how. *Then* you can choose to dismiss him. But dismiss him for the right reasons. For my part, I'll tell the technologists and information architects and UX designers why he's problematic.

And given that the topic of this issue is 'Bye Default', let's say farewell to the solo figure of Alexander. Let's also say goodbye to the default setting of the great white male in the studio or the lab, especially where architecture meets technology. Let's build other, more equitable histories and do the archive-bending research and the interviews of people in the history of computing and architecture who don't get the airtime but do much of the work, who are frequently female and frequently not white.

For my part, I promise to keep connecting the dots. I promise to read the footnotes. Very carefully.

- 1 Christopher Alexander, *Notes on the Synthesis of Form* (Cambridge, MA: Harvard University Press, 1971), 11.
- 2 Marvin Minsky, 'Steps Toward Artificial Intelligence', *Proceedings of the I.R.E.* 49 (1961): 8.
- 3 Sean Keller, 'Fenland Tech: Architectural Science in Postwar Cambridge', *Grey Room* 23 (2006): 40–65.
- 4 Molly Wright Steenson, *Architectural Intelligence: How Designers and Architects Created the Digital Landscape* (Cambridge, MA: MIT Press, 2017), 63.
- 5 *Ibid.*, 75.
- 6 Plato, *Phaedrus*, 265d, quoted in Alexander, *Notes on the Synthesis of Form*, iv.
- 7 Christopher Alexander, 'A City Is Not a Tree, Part 2', *Architectural Forum* 122, no. 5 (1965): 61.
- 8 Alexander, *Notes on the Synthesis of Form*, 'Preface to the Paperback Edition', ii.
- 9 Christopher Alexander, 'Making the Garden', *First Things*, February 2016, accessed July 30, 2020, <https://www.firstthings.com/article/2016/02/making-the-garden>.
- 10 *Ibid.*
- 11 Russell Brandom, 'AI pioneer accused of having sex with trafficking victim on Jeffrey Epstein's island', *The Verge*, August 9, 2019, accessed July 30, 2020, <https://www.theverge.com/2019/8/9/20798900/marvin-minsky-jeffrey-epstein-sex-trafficking-island-court-records-unsealed>.

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In 2004 Archis, the Amsterdam based architecture magazine with a pedigree reaching back to 1929, joined forces with OMA's think tank AMO and C-Lab – a think and action tank at the GSAPP of Columbia University – based on the shared ambition to redefine and re-establish architecture's relevance. Volume was created by Archis Editor in Chief at the time, Ole Bouman in collaboration with Rem Koolhaas (AMO) and Mark Wigley (Dean of GSAPP). From 2017 Archis/Volume changed its structure into more theme-based forms of collaboration, expanding the network of partners. Archis/Volume mediates its research in various ways like workshops, exhibitions, debates, its digital platform and Volume Magazine.

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Nonprofessional features designers, curators, writers, architects and students who took part in the Non-Professional Practice course at Harvard GSD. With Åbäke, Antwaun Sargent, Arta Perezic, Carlos J. Soto, Connie Trinh, Durga Chew-Bose, Elif Erez, Eva Lavranou, Faris Al-Shathir, Felix Burrichter, Jeremy Benson, Jennifer Bonner, Jiangpu Meng, JIM JOE, Karen Wong, Klelia Siska, Kofi Akakpo, Malkit Shoshan, Oana Stanescu, PLAYLAB, INC, Troy Conrad Therrien and Yasong Zhou.

Peripheral Visions occur away from the center of gaze, crucial for sensing motion and detecting threats. The vast majority of the visual field is Peripheral Visions. Look away.

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Unfolding Pavilion is an expanding curatorial project that pops-up in the occasion of major architecture events. It does not necessarily care about the topic of the event it parasitizes, but creates exhibitions made of commissioned original works inspired by the space it occupies, as well as its cultural and historic background.

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