Architects without Buildings: Philip Thiel and the systematizing impulse in modern spatial study

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I. EXTENDED ABSTRACT

Architects speak constantly of "space." Yet we lack a single effective, objective method to describe spatial configuration. Words lack visual immediacy and precision. Architectural drawings enable the abstraction and organization of space, but ignore human visual experience. Images create a semblance of experience, but only from the subjective gaze of the camera, and the comprehensive physical detail they capture makes it hard to isolate purely spatial qualities.

This poster examines attempts to visually quantify space outside of the design process. Its focus is Philip Thiel, an architect and academic active in the second half of the 20th century. While the frameworks for spatial documentation developed by Thiel and others drew interest and attention in their time, none were widely adopted by neuroscientists or designers.

Interdisciplinary collaboration between the neuroscience and design fields requires a set of agreed-upon understandings about the built environment. These early attempts at visual codification are a compelling case study in the potentials and pitfalls of quantifying spatial perception.

"Space" is a recent addition to architectural discourse. In 1863, Gottfried Semper wrote that enclosure of space, not material, was the fundamental quality of architecture. 30 years later, two other German theorists articulated the modern interpretation of space that would hold sway to the present. Adolf Hildebrand saw an "internally animated" continuum of solids and voids where the outer bounds of each object defined external space as much as the object itself. August Schmarsow argued that spatial understanding was empathetic, a mental projection derived from embodied experience. For Schmarsow, humans' innate sense of space preceded the actual built space, making architecture the outcome of "spatial imagination."

The idea of space as an embodied, experiential construct paired with, but separate from, built form was central to modern architecture. It also revealed new ways of understanding cities. In 19th-century Vienna, Camillo Sitte pointed out that the irregular enclosures of the medieval city made for richer urban experience than the new boulevards and grand buildings of the Ringstrasse. In the 1950s, Steen Eiler Rasmussen separated buildings' "cavities" from the "space" of the city. Rasmussen did not view buildings as an expression of "style" or as objects. He presented them as inseparable from urban context, and observed that we do not experience buildings as though looking at them in a picture, but rather through a range of incomplete sensory impressions including texture, color, light, and sound.

In the aftermath of World War II, urban planning largely ignored these ideas in favor of isolated object-buildings on cleared sites. Gordon Cullen's "Townscape," first published in the late 1940s, reclaimed the use of variety, sequence, and passage as an urban-design technique and corrective to indifferent Modernism. Cullen's compelling analysis of old towns, often arranged into "serial vision" sequences simulating movement through an area, formed an operative theory of the urban picturesque. Cullen's sketch vignettes visualized not only spatial arrangements but the impression-forming miscellany Rasmussen had written about, such as street lamps, pavement textures, and signage.

MIT professor Kevin Lynch published The Image of the City in in 1960. It became well known for its classification of urban components, which are still widely used in design education today: Edges, Paths, Nodes, Landmarks and Districts. For Lynch, the "imageability" of these components was only secondarily spatial. Nodes, for examples, had to be distinct places first, host an intensity of use second, with "coherent spatial form" (by which he meant simply enclosed, well-defined areas) the finishing touch.

The Image of the City was a watershed. It abandoned the coherent fabric of the European city for the relative chaos of Los Angeles, Jersey City, and Boston. It considered the role of traffic and high-speed movement through cities enabled by new Federally-funded highways. It adopted social-science research techniques, using interviews with residents of the three cities to create mental-map overlays of "major" and "minor" urban elements. The opinions of these residents about their cities formed a quasi-empirical data set (what we would today call crowdsourcing) that Lynch drew on to strengthen his arguments.

Lynch collaborated with MIT professor Gyorgy Kepes on the Perceptual Form of the City project, which began in 1953 and culminated

in The Image of the City. In that role, Lynch exchanged letters with James J. Gibson, author of The Perception of the Visual World, and summaries of Gibson's concepts (including the visual field/visual world dichotomy) were were included the project's research papers. Though Gibson's work was never directly cited (probably for political rather than academic reasons), The Image of the City stimulated interest in environmental psychology among designers, and by the early 1970s its foray into cognitive mapping could be appreciated by the behavioral science community.

In 1952, a naval architect turned architecture student, Philip Thiel, completed his Bachelor's thesis at MIT. It proposed a series of urban landscape interventions to visually unify the pedestrian experience in a central part of Boston, not unlike the Freedom Trail, which debuted around the same time. Thiel returned to MIT in 1956 a researcher for Lynch. He traced over image sequences in an attempt to edit and clarify how the hierarchy of visual content changed as one moved through urban space.

After taking a position at Berkeley, Thiel continued his research with a study of precedents in sequential- and movement-notation systems, citing the work of Gibson, Sergei Eisenstein's cinematographic diagrams, and Rudolph Laban's "labanotation" choreography. In the next two years, Thiel produced a conceptual framework positing an "Anatomy of Space" comprised of space, surface, and volume, followed by a case study of a four-block area of San Francisco, where he experimented with notational diagrams based on plan, axonometric and perspective views. Soon after, he drew up a prototype system relating different views and spatial conditions to a diagram set using a central crosshair to mark the center of vision.

Thiel would develop this system through a 15-month stay in Japan, and published the results in a series of journal articles in 1961 and 62. The system became more sophisticated, more flexible, and much more esoteric. The bullseye graphic was joined by a vertical track indicating movement, as well as numbers indicating height and positioning, and references to opaque categories and types of space beyond the original three-part anatomy. Though the system was improved over the four articles Thiel published, it remained impossible to read without close attention to explanations and photographs.

Thiel continued his work on space notation through his decades teaching at The University of Washington. It took until the publication of Thiel's magnum opus, in 1997, to collect his research and experimentation on spatial representation in one volume (where it is spread over about 100 pages). This diverse collection of approaches is wide-ranging and creative, though it also seems an elegy for the original promise of a simple, systematic and objective method for documenting the experience of the built world.

Such a system would be especially useful today. The rapid development of computing power has made software that creates virtual 3-D environments on screens widely available. We still await a full conceptual framework to explore the utility of graphic representation to spatial experience.

2. REFERENCES

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