

Understanding and Making Places in the City: Integrating the Urban Visions of Christopher Alexander and Bill Hillier

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Political scientist Douglas Rae's *City: Urbanism and its End* (Rae 2003) is a perceptive examination of traditional American urbanism grounded in lively streets, mixed uses, and a taken-for-granted place-based commingling of citizenry different in race, ethnicity, and class. Using New Haven, Connecticut as his case study, Rae creatively draws on archival materials to portray the everyday social and economic geography of the American city from the 1870s to the 1920s. He demonstrates the crucial importance of a locally-grounded network of human relationships sustaining urban businesses, civic organizations, and government.

Rae also documents how, from the 1920s onward, the traditional American city unraveled, overwhelmed by new technologies, economic forces, regional decentralization, and federal policies that gradually destroyed the earlier robust street life. Though he concludes that we can never recreate the old urbanism, Rae believes that we might improve our contemporary cities by understanding and remaking old urbanism's best features -- "the magic of small commitments to place, the value of strangers in ordinary life, the humanity of well-ordered sidewalks..." (ibid., p. 31).

A practical problem in recreating these urban qualities is that Rae's old urbanism just happened -- it unfolded for the most part spontaneously because of a particular constellation of historical, technological, and economic circumstances. If we are to reproduce lively urban places today, we cannot design them on the basis of historical appearance or creative whim. We must understand self-consciously how these places work and how physical design contributes to their everyday dynamism.

The City of Wholeness

One key thinker offering such self-conscious understanding is the American architect Christopher Alexander (1977, 1993, 1987, 2002-05), whose central concern is wholeness -- a situation in which the parts all belong and have a place. In his work from 1987 on, Alexander explores wholeness through the concept of center -- any sort of spatial concentration or organized focus or place of more intense pattern or activity, for example, a handsomely designed entry, a well placed fountain, an elegant colonnade, a welcoming building, a lively plaza full of people enjoying themselves, or an entire city neighborhood that is well liked and cared for.

In his *New Theory of Urban Design*, Alexander (1987) illustrates the use of centers through a simulation experiment conducted with architecture graduate students at the University of California at Berkeley in a design studio taught by him and faculty colleagues. The nineteen students in this studio focused on thirty acres of the San Francisco waterfront just north of the Bay Bridge and, at the time, destined for development. Eventually, the students transformed the largely empty site into an a set of places that included such elements as a pedestrian mall, a main

square, a waterfront park, an electronics factory, nautical facilities, an outdoor market, and fishing pier.

To illustrate how the San Francisco waterfront simulation worked, it is useful to review the first phase of the project, which involved development of the northern part of the site. To begin, students and faculty visited the site and decided, through group consensus, that the northern portion seemed the right place to start development, since what seemed to be the natural entrance to the site -- Mission Street -- was there.

One student had the vision of a high, narrow arching gateway that would serve as a distinctive entry marker. This entrance gateway was important because it generated a sense of passage that started beneath the arch and continued south. In this way, the gateway hinted at a larger whole -- a street and pedestrian mall going south into the heart of the site. This pedestrian street was then defined more exactly by the next two projects: a hotel and a café, which fixed the street's west side and width (an existing building on the east fixed the street's east side). Soon after, project 5 -- a community bank -- established the far end of the street, which was then completed by a series of increments that included an apartment house, an office building, and various smaller-scale projects like a gravel walk and low wall.

In terms of centers, each project defining the pedestrian street did three things at once: first, it helped to complete one major center already defined; second, it helped to pin down some other, less clearly defined center; third, it hinted at some entirely new center that could emerge later. One example is the hotel (project 2), which wrapped around a garden courtyard. First, in conjunction with the gateway, this building helped to complete the northern edge of the site; second, it helped to establish the larger center of the pedestrian street by fixing its western edge; third, in shaping itself around an outdoor courtyard, the hotel hinted at a new

center that in later increments would become a large public garden running south from the hotel and shaped by a series of apartment buildings.

Pathway Structure and Human Encounter

British architectural theorist Bill Hillier (1983, 1984, 1996) is another thinker whose ideas are crucial for regenerating lively urban places because he demonstrates how the spatial layout of pathways can informally and automatically bring people together in urban space or keep them apart. A key theme for Hillier is permeability -- the ease of physical movement through a district, largely established through the number of alternative routes running through that district.

In seeking to understand the ways that pathway fabric relates to human movement, co-presence, and encounter, Hillier develops the concept of axial space, which relates to the one-dimensional qualities of space and therefore has bearing on human movement through a settlement as a whole. Axial spaces are illustrated most perfectly by long narrow streets and can be represented geometrically by the maximum straight line that can be drawn through an open space before it strikes a building, wall, or some other material object.

Partly through quantitative analysis, Hillier concludes that axial spaces are significant for understanding a settlement's global pattern -- that is, the way the particular spatial configuration of a pathway fabric lays out a potential movement field that draws people together or holds them separate. Hillier uses the term natural movement to describe the potential power of the pathway layout to automatically stymie or facilitate movement and such related environmental events as informal sidewalk encounters and busy streets.

To establish precisely the amount of natural movement that a particular pathway configuration potentially generates, Hillier introduces the concepts of **integrated** and **segregated** pathways. The former is a pathway that makes itself readily accessible to many other pathways and therefore is **shallow** in relation to them. In other words, many other pathways and the users on these pathways feed into this pathway, thus it is well integrated in relation to the surrounding grid structure and more than likely a well-used route along which many people travel. In contrast, few or no other routes feed into **segregated** pathways, which are poorly accessible and **deep** in relation to the surrounding grid. Segregated pathways typically are dead ends or elements in treelike grids; one thinks, for example, of the “cul-de-sac and loop” pattern of today’s low-density, automobile-dependent suburbs, or the hierarchical circulation layouts of many modernist housing estates.

In regard to cities, Hillier demonstrates that most urban pathway systems have traditionally been an integrated fabric of variously-scaled **deformed grids**—pathway systems in which the most active, integrated streets make a shape that roughly suggests a wheel and spokes. Typically, each of these grids is associated with some designated neighborhood or district -- for example, London’s Soho, West End, or City. In turn, the integrated pathway structure of these districts join together to shape a much larger **deformed grid** that founds the dynamic of natural movement for the city as a whole.

Making Place Whole

For architecture and urban design, the work of Alexander and Hillier is crucial because their thinking illustrates how physical and spatial qualities help make places and human communities one way rather than another (Seamon 2004, 2006, 2007a, b). Hillier demonstrates

that particular spatial configurations help sustain particular intensities of informal bodily contacts and thus human co-presence and potential informal, interpersonal encounters. He says that if architects and urban designers wish to contribute to making vital urban districts with a lively street life, then pathway configuration -- specifically, a permeable, integrated deformed grid -- is crucial.

Alexander's work is important because it helps to envision and integrate environmental parts that, through the centering principle, facilitate place wholeness. He suggests that the serendipitous miscellany of traditional urban places described by Douglas Rae can be revisioned as an intricate hierarchy of dense, overlapping, variously-scaled centers regenerable through a participatory process grounded in a thorough understanding of environmental and place wholeness.

In his study of the old urbanism, Rae argues that so far the most important 21st-century effort to recreate the traditional city is "New Urbanism," the urban design movement that seeks to design walkable, mixed-use neighborhoods where buildings of a uniform architectural style shape coherent public spaces for neighborly sociability (e.g., Duany et al. 2003). I agree with Rae that New Urbanism is an important attempt to remake urban place, but I would also emphasize that Alexander and Hillier's ideas indicate ways in which New Urbanist principles might become more effective: first, thinking through ways in which environmental parts better relate to place wholes; and, second, evaluating pathway permeability to establish how much potential space-based sociability a New Urbanist design really has.

The design challenge voiced by both Alexander and Hillier is that architects and urban designers must think and design contextually, in the sense that all parts of urban place are

interconnected, and that the way one part is made has bearing on all the other parts and how they work together or do not.

For both men, the building as architectural object generated by the freewheeling creativity of the architect as artist is called into question. Rather, the engine for good design becomes a set of formative principles that underlie, circumscribe, and guide the creative act, which becomes more grounded and real because it is responding to the reality and needs of places as they really work as everyday worlds.

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