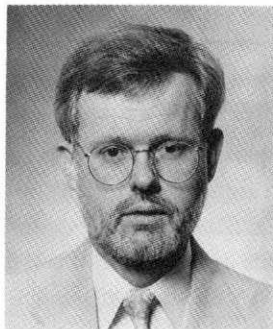


The Life of the Place

by David Seamon



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This article suggests that architect Bill Hillier's theory of space syntax¹ has significant implications for a phenomenology of architecture and place. Hillier demonstrates that the physical and human worlds are intimately related through the spatial morphology of building and settlement layouts. In this sense, his work illustrates one aspect of a central phenomenological theme – human-immersion-in-world. A phenomenological extension would ask, among other questions, what different styles of lifeworld – a person or group's everyday world of taken-for-grantedness – relate to what patterns of paths, circulation, movement, interaction, and encounter.

ONE OF THE MOST IMPORTANT 20th-century works on urban life and design is Jane Jacobs' *The Death and Life of Great American Cities* (Jacobs 1961). This book, an implicit phenomenology of the urban lifeworld (Seamon 1991b), argued that streets are the heart of the city and should be alive with pedestrian activity that accepts both residents and visitors, insiders and outsiders. Jacobs claimed that the foundation for a vital street life is *diversity* – a lively mix of land uses and building types that supports and relies on a dense, varied population of users and activities. She also believed that integral to diversity and lively streets are particular qualities of the *physical city* – for example, doors directly entering the street, small walkable blocks, and the opportunity for pedestrians to turn corners frequently.

Since the mid 1970s, a group of researchers at the Bartlett School of Architecture and Plan-

ning, University College, London, has provided powerful conceptual and empirical support for Jacobs' more intuitive claim that the physical-spatial environment plays an integral part in making active streets and an urban sense of place. Largely the work of architects Bill Hillier and Julienne Hanson, this research examines the relationship between physical space and social life, or, more precisely, "the social content of spatial patterning and the spatial content of social patterning" (Hillier & Hanson, 1984, pp. x–xi). Most often, this work has come to be called Bill Hillier's *theory of space syntax*, the phrase used in this commentary.

Unfortunately, many environmental designers and scholars have ignored Hillier's work or have conveniently discarded it through the inaccurate charge of "environmental and architectural determinism." In fact, Hillier's work is equal in conceptual and practical power to



Figures 1 & 2. Streetscapes of a typical village in southern France (from Hillier and Hanson, 1984, p. 58). This and following figures reproduced with the permission of Cambridge University Press.

Jacobs' urban vision and may well be more significant because Hillier appears to provide incontrovertible evidence that a settlement's particular spatial layout contributes to the kind of place and community which that settlement becomes.

If this conclusion is true, Hillier's work points toward two revolutionary possibilities: first, that urban designers must deal with space before they deal with form; second, that in dealing with the importance of space, designers must understand the settlement's overall pathway network first. Only then will they be rightly able to establish the best layout for the particular part of the city being designed or reworked.

Some readers familiar with space syntax may wonder why an environment-behavior researcher who emphasizes a phenomenological approach in his work (e. g. Seamon 1982, 1987, 1990, 1991, 1993) would be interested in Hillier's work, since it is positivist conceptually and emphasizes aggregate measurement, quantitative validation, and societal-spatial structures that appear to be at least partly grounded in a Marxist-structural stance.

There are at least three reasons for phenomenological interest in Hillier's work. First, he and his colleagues demonstrate once and for all that

the built environment, particularly through its spatial qualities, plays a significant role in supporting a lively street life. Second, space syntax uses quantitative evidence in such a way that the student can see clearly why the relationship between physical and human worlds makes such a difference and why particular city streets and street networks are more or less active.

Third, Hillier identifies the type of street network that supports a lively public life. A phenomenological complement to Hillier's work would examine this type of street network *experientially* in terms of the everyday experiences, behaviors, and events that are supported, especially the relationship among physio-spatial qualities, pedestrian movement, chance encounters, informal sociability, and formal social structures. In short, Hillier's work goes far in helping one understand how the dynamic between environmental order and serendipity fosters place and community.

A Phenomenology of Architecture and Place

These issues will resurface later, but first it is useful to overview the contribution of phenomenology to environmental and architectural studies and to present Hillier's central argument,

which can then be discussed from a phenomenological vantage point.

Phenomenology is a critical, descriptive science that is related, in method and philosophical outlook, to other interpretive traditions that include existentialism and hermeneutics (Stewart and Mukunis 1974). The approach includes different conceptual styles that range from the transcendental phenomenology of Edmond Husserl to the hermeneutic phenomenology of Paul Ricouer to the existential phenomenology of Martin Heidegger and Maurice Merleau-Ponty (Spiegelberg 1982). In using the term here, I refer to the existential tradition and refer to a way of knowing that seeks to describe the underlying, essential qualities of human experience and the world in which that experience happens (Birch 1989, Relph 1985, van Manen 1990).

Central to the phenomenological approach is the assumption that people and world are intimately related in a way whereby each makes and reflects the other. People do not act on the world as subjects in relation to an object (as, for example, cognitive or structural approaches to environmental behavior would assume) but, rather, are experiencing beings whose actions, behaviors, and understandings always presuppose and unfold in a world that is, in turn, supported by and a reflection of these actions, behaviors, and understandings.

As a way to focus their study of this person-world immersion, or *being-in-the-world*, as it is sometimes called, phenomenologists seek to explore the essential nature of *phenomena* – things or experiences as human beings experience those things or experiences. In the architectural and environment-behavior literatures, exemplary phenomena explored phenomenologically include *place* (Dovey 1985, Mugerauer 1988, Relph 1976, Violich 1983), *dwelling* (Jager 1975, 1985, Stefanovic 1992), *at-homeness* (Barbey 1992, Seamon 1979), *landscape* (Chaffin 1989, Dorward 1990, Nogué i Font 1993), architectural and environmental elements as *archetypes* (Thiis-Evensen 1987) or *natural symbols* (Harries 1988, 1993), and the significance of in-

dividuals' *bodily routines* coming together in space, which is transformed into *place ballet* (Hill 1985, Seamon 1979, Seamon & Nordin 1980).

In all of this work, any talk of some subject-object or people-world division is rejected as researchers attempt to find a method and language that respect the central phenomenological fact that *people are their world and that world is its people*. In this sense, Hillier's work has immediate relation to the phenomenological vantage point because he recognizes how a world's underlying spatial structure, or *morphology*, as he calls it, guides particular actions and circulations of human bodies moving through that world and, how, in turn, a selfconscious understanding of this human world/physical world intimacy might lead to environmental design and policy that supports a stronger sense of place and community. Next, I overview his work in greater detail and make some explicit links to phenomenological themes and principles.

Villages and Beady Rings

All of Hillier's work seeks to explore the relationship between social pattern and the built environment. He wonders if there is some "deep structure of the city itself" that contributes to urban life (Hillier 1989, p. 5). Hillier's interest in this "deep structure" at least partly began in southern France as he studied village layouts there – for example, the small town of Gassin in the French region of Var (figures 1, 2, 3). Hillier wondered whether there was any sort of under-

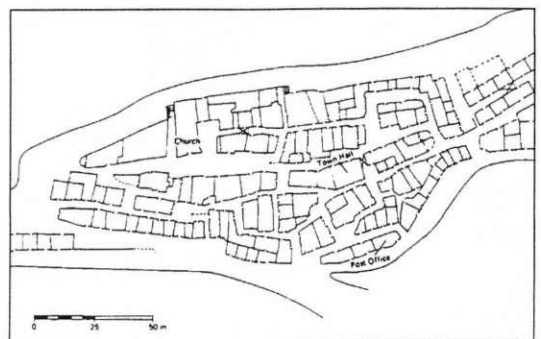


Figure 3. The small French town of Gassin (from Hillier and Hanson, 1984, p. 90).

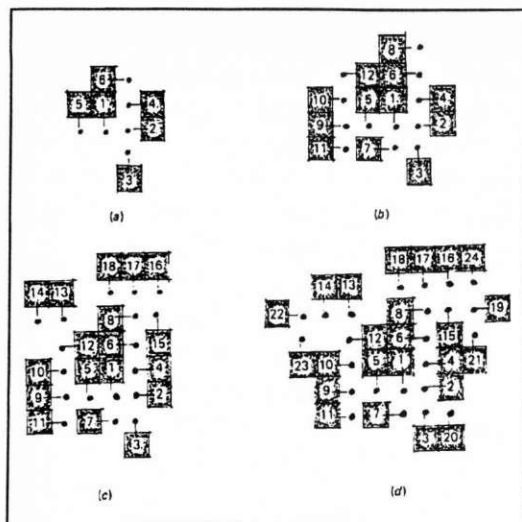


Figure 4. The first four stages of a computer simulation; note by the fourth stage that the beady-ring pattern has become clearly visible (from Hillier and Hanson, 1984, p. 60).

lying spatial order to Gassin, or was its physical arrangement largely determined by *non*-physical socioeconomic factors like requirements of livelihood or structures of family and kinship?

To answer this question, Hillier examined several villages of the Var region for underlying commonalities. He found the following:

1. All building entrances face directly onto the village open spaces; thus, there are no intervening boundaries between building access and public space.
2. The villages' open spaces are continuous but irregular in their shapes; they narrow and widen, like beads on a string.
3. The spaces join back on themselves to form a set of irregularly shaped rings.
4. This ring structure, coupled with direct building entry, gives each village a high degree of permeability and access in that there are at least two paths (and, typically, several more) from one building to any other building.

In time, Hillier's research group studied large numbers of traditional settlement patterns throughout the world and concluded that many of these places incorporated the same four features present in Gassin and other French villages.² Because of the irregularly-shaped spaces

linked by irregularly-shaped rings, Hillier came to call this recurring spatial pattern the *beady-ring structure*.

A Computer Simulation

This necklace pattern is the first central concept in Hillier's theory of space syntax. The next question he asked is why this beady-ring structure recurs. Particularly, he wished to establish whether or not there are some set of geometric rules that, *in themselves*, contribute to the recurring pattern.

To answer this question, Hillier and his colleagues developed a computer-simulation model that, through statistical probabilities grounded in simple spatial rules, mimicked the beady-ring structure of real-world settlement layouts. These spatial rules are two:

- (1) a one-doored building whose entry attaches to an equally-sized unit of open space;
- (2) the random aggregating of these building-space "doublets," but with the stipulation that each new doublet attaches itself either to a building side or to an open side of a doublet already in place.

Figure 4 illustrates the first four stages of one such simulation. One notes that, by the fourth stage, a beady-ring structure has appeared.³ Through this computer simulation, Hillier argued that he had established rules of the "urban object itself" (Hillier 1989, p. 5). In other words, he claimed that the beady-ring pattern has self-generated through a set of simple, underlying geometric events. As was noted above, *morphology* is the word Hillier uses to describe the underlying spatial coherence that provide settlement layouts with an underlying geometric pattern and connectedness.

At the start, one must realize that this geometric coherence *runs beneath* a spatial network like the hand beneath a glove provides its organized form. This geometric coherence is not additive but synergistic: invisible and whole throughout, it is *always already there* to support one dynamic of circulation and exchange rather than some other.

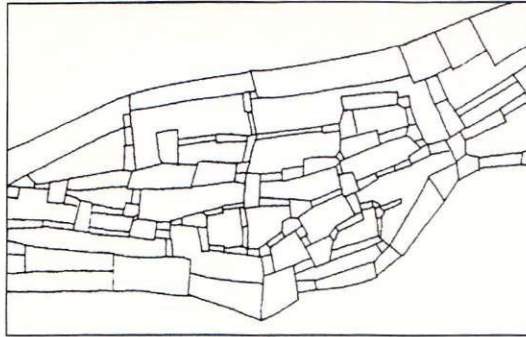


Figure 5. A map of Gassin's convex spaces (from Hillier and Hanson, 1984, p. 92).

Interpreted phenomenologically, this spatial pattern can be said to be an in-tegral part of the particular human worlds and places that unfold in its midst. In part, because of the particular nature of the spatial pattern, these worlds and places are alive with activity, interaction and encounter, or they are dead and empty. We shall see shortly that one problem of the modern Western city, according to Hillier, is that designers and planners have no understanding of morphology and have therefore allowed this invisible fabric to deteriorate or to collapse. The result is lifeless streets and districts.

Axial and Convex Spaces

Next, Hillier asks how this morphological regularity can be understood in terms of mapping and measurement. At the start, one faces a difficult recording problem: in terms of everyday function, a settlement's open space is one continuous unit but, formally and spatially, this network is composed of different sorts of parts – streets, alleys, squares, plazas, and the like. How can this unwieldy collection of spaces be identified and measured without destroying the seamless nature of the settlement's open space?

In dealing with this problem, Hillier makes several major contributions toward a language of settlement morphology. Here, I want to focus on his identification of two contrasting types of spaces – *convex* and *axial* – because they are the empirical base for his more sophisticated spatial measures.

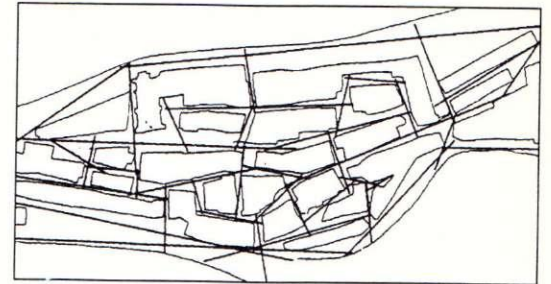


Figure 6. A map of Gassin's axial spaces (from Hillier and Hanson, 1984, p. 91).

First, there are what Hillier calls *convex spaces*, which relate to the two-dimensional nature of open space and are best exemplified by plazas, squares, and parks. Convex spaces can be identified geometrically by areas inside of which no line drawn between any two points goes outside the area. This geometric quality means experientially that all points within a convex space can be seen from all other points, thus, for example, all building entrances on a convex space will be visible from all other entrances on that space.

In that they can have considerable breadth in relation to width, convex spaces relate to the *beadiness* of the beady-ring structure. By identifying the least number of convex spaces accounting for all public outdoor space (including streets and pathways), one can construct a *convex map* like the one in figure 5 for Gassin.

In contrast to convex spaces are what Hillier calls *axial spaces*, which relate to the one-dimensional qualities of space and are, therefore, best illustrated by long narrow streets. An axial space 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. An *axial map*, therefore, is made by drawing the smallest set of straight lines that pass through each convex space and link all pathways together as in Gassin's axial map (figure 6). In terms of the beady-ring structure, axial spaces relate to its *stringiness*.

Axial & Convex Spaces Phenomenologically

Hillier's depiction of axial and convex spaces is important phenomenologically because their identification provides important insight into experiential dialects like movement/rest, inside/outside, and dwelling/journey. When, for example, is a space more a corridor of movement rather than a site where people can remain comfortably at rest and establish a place of regular activities and events? How does a space contribute to a sense of deep familiarity and attachment—what Relph (1976) calls *existential inside-ness*. Alternately, how does a space become a place that is largely unused, disliked, or feared? Or, yet again, how does a space become a place where insiders and outsiders, residents and strangers, localites and visitors, come together in a safe and easy way?

The notions of axial and convex spaces offer significant clues to answering questions like these. The phenomenological interest in axial spaces is their relationship to lived-movement from place to place within the settlement and their role in contributing to one's awareness of the settlement *as a whole*. How many ways are there of getting from one place to another in the settlement and which routes are used for what trips for what reason? What are these various traversals like experientially? For example, how many of these movements are habitual, involving regularity and routine? What and whom does one encounter on these various traversals and at what points and places does he or she linger, hurry, look, notice, enjoy, become concerned, fall into obliviousness, and so forth?

In contrast, convex spaces more often relate experientially to rest, locality, and events-*in-place*. Long, narrow streets possess convexity and may have some sense of place, but their one-dimensional axial shape more typically involves them with movement and circulation flow. On the other hand, "fatter" convex spaces are traditionally places that support events and occasions – for example, the square where older people sit or children play; the piazza where the

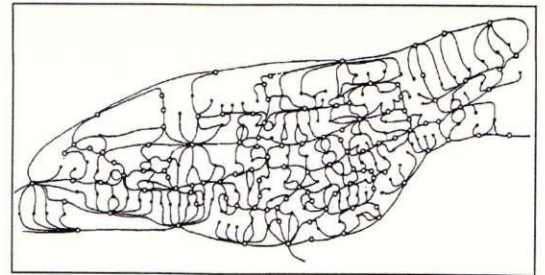


Figure 7. Gassin's interface map (from Hillier and Hanson, 1984, p. 104).

weekly market is held. If axial spaces more often relate to the experiential exchanges and interactions among districts and neighborhoods of the settlement as a whole, then convex spaces relate more often to the nature of these parts, districts, and neighborhoods as they are within themselves, particularly as they evoke a sense of place and locality.

In seeking to understand how the buildings shaping a convex space relate to that space in terms of movement and potential encounter, Hillier draws on what he calls an *interface map*, which uses lines and dots to identify the spatial relations between building entries (solid dots) and convex spaces (unfilled dots).

If one studies Gassin's interface map in figure 7, one notes that nearly all convex spaces have direct access to at least one building entrance. Gassin's pattern demonstrates that the same spaces that serve to link the settlement together as a whole (or *globally*, to use Hillier's word) can also serve an important local value in that there is an immediate spatial relation between individual buildings and the adjacent public spaces of street or square. This direct abutment is what Hillier calls *shallowness* – a situation where one can move directly from one space to another. The opposite possibility is *depth* – the situation where, to get from one space to another, one must pass through some other space or spaces (a feature regularly characteristic of much public-housing design of the 1950s and 1960s).

Hillier points out that in modern urban design, there is typically much less shallowness than in

cities of the past. One result is that the fluidity between building entries and street is less and there are potentially fewer encounters – both between localites and localites, and localites and outsiders. This fact is crucial, phenomenologically, because it immediately suggests one reason why so many urban districts today possess little street vitality. I want to make more of this point below, but first it is important to see how Hillier gives more precision to axial and convex spaces through creative mathematical descriptions.

Measuring Lively and Quiet Places

A central criticism of Jane Jacobs' conception of the city was that her evidence was anecdotal and that she offered no precise empirical proof for her claim that the physical environment played a pivotal role in supporting urban diversity and lively streets. One of Hillier's most important contributions to place studies is his inventing clear cartographic and mathematical procedures for recording axial and convex spaces and for establishing empirical measures as to how particular spaces do or do not establish larger movement and interaction patterns, both locally and city-wide.

Axial, convex, and interphase maps provide one example of Hillier's inventiveness and, in fact, establish the primary empirical base around which he constructs a wide range of numerical measures and indices to pinpoint both local and global patterns for a particular settlement. Because an active street involves movement and flow, Hillier is particularly interested in measurements that will identify which pathways in a settlement make themselves most readily accessible to other pathways and thereby integrate the locality with the wider surroundings. At the same time, Hillier devises measures to identify the pathways that make themselves less accessible to their surroundings and thereby, typically, have less street activity.

Hillier's quantitative procedures for establishing measures of integration and segregation are sophisticated, and the interested reader is

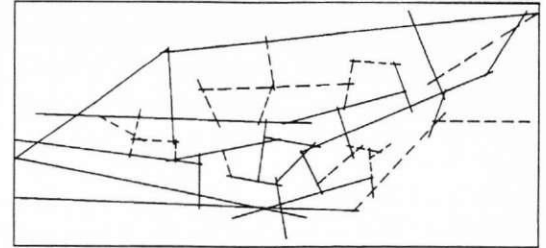


Figure 8. Gassin's "deformed wheel". Note that the streets of greater movement are marked by the solid lines whose shape roughly suggests a wheel and spokes; in contrast, the hatched lines indicate streets of lesser movement, which, overall, are between the more active thoroughfares (from Hillier and Hanson, 1984, p. 117).

directed to chapter 3 in *Social Logic* (Hillier & Hanson, 1983).⁴ For the less gifted mathematically, there are maps that distill these calculations spatially. For example, figure 8 is a map of Gassin that summarizes the streets of greater and lesser activity as Hillier has identified them through his numerical procedures. The streets marked by solid lines depict the village's *integration core* – those streets that most powerfully draw the movement of other streets to themselves and, therefore, are alive with commerce, street activity, and public life. In contrast, the hatched lines indicate Gassin's *segregation core* – the streets that deflect activity away from themselves and, therefore, indicate pockets of quiet and seclusion.

The Deformed Wheel

Phenomenologically, these cores have crucial significance because they provide one empirical indication of the degree of activity for particular parts of a place. Hillier next asks if these lines of more and less activity indicate some larger morphological structure for the settlement *as a whole*. In fact, after studying the integration and segregation cores of many settlements, both Western and non-Western, Hillier concludes that such a larger global structure exists, and he calls it the *deformed wheel*. This discovery is perhaps Hillier's most significant contribution to a phenomenology of place and environmental activity.

The rim, spokes and hub of this wheel are the pathways with high integration values (in figure 8, the solid lines). Typically, these streets are the most used by residents of the settlement and are also the main entry routes into the settlement and therefore heavily used by strangers. Also, most of the largest convex spaces and location-dependent uses, like shops, are on the streets of the deformed wheel.

From a phenomenological perspective, what is perhaps most striking about the deformed wheel is that, in the interstices between the most active streets are *the most segregated, less used pathways* (in figure 8, the hatched lines). Hillier concludes that, for many traditional settlements, the most active areas abut the most quiet areas: the places of street life, publicness, and strangers' mixing with residents are a short distance from the more private areas used mostly by residents only. Movement and rest, activity and place, journey and dwelling, difference and locality, publicness and home, lie apart yet together! Hillier explains:

By linking the interior of the settlement to the periphery in several directions – and always in the direction of the main entrances to the settlement and the neighboring towns – the effect of the integrated lines is to access the central areas of the town from outside, while at the same time keeping the core lines close to the segregated areas, in effect linking them together. Since the core lines are those that are most used by people, and also those on which most space-dependent facilities like shops are located, and the segregated areas are primarily residential, the effect of the core is to structure the path of strangers through the settlement, while at the same time keeping them in a close interface with inhabitants moving about inside the town. The structure of the core not only accesses strangers into the interior of the town, but also ensures that they are in a constant *probabilistic* interface with moving inhabitants. Indeed, it seems reasonable to propose that the spatial structure of the settlement exists

in order to construct this interface (Hillier, 1989, p. 11).

Environmental Determinism?

For many architects and environment-behavior researchers (many of whom continue to be caught up in the dubious conceptual assumption that the built environment is but a small dependent subset of "culture"), Hillier's space syntax has not been popular because it suggests that the physical environment plays an integral part in making human worlds what they are. In this suggestion perhaps lies Hillier's most courageous contribution to design and to environment-behavior research: *He has been brave enough to raise again the question of how, exactly, the material and human worlds are related.*

Hillier is well aware that he is susceptible to deterministic charges and, throughout his work, states his case with great care. The heart of his argument is that a settlement's physical environment sets up, largely through its pathways, a spatial field, the nature of which has bearing on the relative amount of human movement, interaction, and encounter. Physically, this spatial field is expressed through the deformed wheel and the pockets of quiet within its interstices.

In one particularly encompassing passage, Hillier dismisses the argument that the material environment plays no role whatsoever in human life. He then pinpoints the way in which space syntax provides a way to understand the significance of the physical world:

I argue that the belief that spatial form has *no* effects on people and society is patently absurd. If this were the case then we could design every monstrosity without penalty. My proposal is that the determinable effects of spatial form on people are both limited and precise. Spatial form, I argue, creates the *field of probable* – though not all possible – *encounter and co-presence within which we live and move*; and whether or not it leads to social interaction, this field is in itself an important socio-

logical and psychological resource (Hillier, 1989, p. 13).

To describe this field of potential encounters as it is grounded in a settlement's physical layout, Hillier uses the term *virtual community*. He chooses the word "virtual" because this spatial field is always present, though sometimes only "latent and unrealized" (ibid., p. 16). For environmental design, Hillier's crucial point is that the virtual community is a "direct product of spatial design" (ibid., p. 13). The design and planning need is, first, to understand the significance of space syntax in the life of the city; and, second, to use physical design to "construct the field of potential encounter and co-presence that we call the virtual community" (ibid., p. 16).

Conceptual and Design Implications

For thinking about and designing the virtual community, Hillier's most important notion is the deformed wheel, which links local street life and interpersonal encounter with the larger global structure of which the locality is a part. "It is the global pattern," says Hillier (1989, p. 218) "that seems most to affect how towns *work* and create the patterns of use and movement that we identify as urban." To facilitate an active street life, urban designers should proceed from larger to smaller scale, since it is the deformed wheel *as a total structure* that juxtaposes liveliness and quiet. Individual developments should first be considered in terms of how their path systems strengthen or weaken dynamics of the deformed wheel and only then be worked through in detail:

If we want to recreate urban life, then we have to learn to design from the global to the local, that is, we have to start by reading the large-scale pattern of an area, then design the internal structure of new developments to take advantage of [the large-scale pattern] – not fixing [it] forever, but adapting [it] with understanding as well as good intentions (Hillier, Hanson & Peponis 1987, p. 231).

Yet Hillier and his colleagues (e. g., Hillier & Hanson, 1983, pp. 133–40; Holanda 1989; Miller 1989; Peponis 1989) go on to demonstrate that most modern architectural and planning practice are oblivious to the global level and consider only the locality or individual architectural forms: "Everything is invested in what the local spaces are like, and little attention is given to the global system per se" (Hillier, 1989, p. 230).

Hillier points out that conventional urban and planning history largely blames the automobile for the destruction of both the global and local dimensions of urban place. In a strikingly different way, he argues that the real culprit is a taken-for-granted social and political ideology "based on the paramount values of hierarchy and privacy" (ibid.). This transformation in thinking "began in the middle of the 19th century, fifty years at least before the car" (ibid.). In this ideology,

Not only are individuals and families said to require seclusion – which does happen in traditional urban forms – but also local groups of neighbours, whole neighbourhoods and even whole communities are also said to require it above all else – which does *not* happen in most traditional urban forms. The multi-level segregation of the modern urban landscape, often achieved in spite of high population densities, seems to many theorists an ideal to be aimed at (ibid.).

There is no doubt that Hillier is at least partly correct in this conclusion, which is perhaps most clearly demonstrated in the modernists' urban designs – e. g., Le Corbusier's "Radiant City". More recently, however, this "isolationist" ideology has also underlaid environment-behavior research and design – for example, architect Oscar Newman's theories of "defensible space" and "communities of interest."⁵

In addition, there are other styles of "isolationism" – for example, formalist architects like Aldo Rossi, Andres Duany, or Leo and Rob Krier (who seek to mimic the spatial structure of pre-

modernist cities but have no real understanding and produce piecemeal counterfeits) or post-modernist and deconstructionist architects like Robert Venturi and Peter Eisenman (who believe, for contrasting reasons, that place-bound community is a tedious anachronism and thereby discard propinquity and wholeness of place entirely).⁶

On the other hand, there are some designers and thinkers who point toward much agreement with Hillier's perspective. The most obvious example is Jane Jacobs, whose work still holds a strong place in urban and community design. Her emphasis on street life, physical diversity, and small blocks has much in common with Hillier's deformed wheel and its areas of activity and rest. Also kin is the pattern language of Christopher Alexander, especially his efforts toward a "new theory of urban design."⁷

At the same time, Hillier's work is in some ways incomplete. One of the most awkward problems is its bias against the formal and functional dimensions of urban design and architecture. Hillier may well be right in arguing that global qualities as they are expressed in a settlement's layout must be established before smaller-scale architectural and activity-use decisions are made. On the other hand, specific formal and functional qualities of the built environment also contribute significantly to a sense of place and human identity, and these dimensions must be part of a complete environmental and architectural theory.⁸

Another lacuna in Hillier's work relates to the experiential fabric of the beady-ring structure and the deformed wheel. Associated with Hillier's contrasting pathway patterns must be contrasting environmental experiences and senses of place. How are networks of integration and segregation alike and different in terms of spatial

behaviors and experiences? What sorts of events, encounters, moods, and so forth, are associated with what patterns of integration and segregation? What would the worlds of everyday taken-for-granted experience – what the phenomenologist calls *lifeworlds* – be for the inhabitants and visitors of a highly integrated traditional urban district vs. a more recent planned housing estate that generates a high measure of segregation?

For example, one phenomenological project would be to establish, using Hillier's methods, the pathways of integration and segregation for specific urban districts or towns and then to study their activity patterns and lifeworlds. In this way, one might begin to understand better how other environmental and human qualities – e. g., land uses, activity types, demographic characteristics – enhance or weaken the pathway structure itself. In fact, in his latest work, Hillier (et al., 1987) has identified pathways of integration and segregation and then gone out and observed actual pedestrian activity. The next step, phenomenologically, would be a careful description of the lifeworlds of these pathways, through participant observation and other empathetic methods.

Hillier's space syntax offers invaluable insight for understanding how pathway patterns contribute to making a place what it is. He also demonstrates how smaller parts of a place are integrally bonded to the whole through circulation and morphological structure. The need is to integrate this emphasis on movement and spatial connectedness with other conceptions of urban and community design. In this sense, the phenomenological interpretation of place, in its ability to gather together the many various parts of the physical and human worlds, is perhaps the best organizing framework.⁹

Notes

1. An earlier version of this paper appeared in the *Environmental and Architectural Newsletter*, 4, 2 (spring 1993): 10–19. The author would like to thank John Peponis for commentary on that version.
2. This pattern is true for settlements whose main function is practical livelihood (what Hillier calls “the production of everyday life”). On the other hand, settlements for religious or ceremonial purposes (called “the formal reproduction of social structures”) do not typically follow this pattern. For many towns, both types of order are present. See Hillier, 1989, p. 11; Hillier & Hanson, chaps. 2, 6.
3. By manipulating the probabilities to account for directional or building-group bias, Hillier could simulate a broad range of settlement forms that, on the surface, seem dramatically different in underlying morphology.
4. The derivation, number, and subtlety of these statistical measures is an achievement unto itself; suffice it to say that, from a phenomenological perspective, Hillier’s work provides a powerful example of positivist-quantitative research that serves to allow the phenomenon to emerge (rather than submerge, distort, or misrepresent the phenomenon as so much positivist work typically does). Hillier claims that the empathy of his measures is so because he is “trying to describe an order that is already present in the system” (Hillier & Hanson, 1984, p. 45).

On the other hand, it is important to point out that most of Hillier’s numerical measures are derived from the spatial arrangements of the convex and axial spaces themselves (e. g., the number of other streets that a street intersects); other important ingredients of place – e.g., adjoining activities, uses, and buildings types – are not considered. In this sense, the geometry of place in terms of pathways and open spaces is well served but not the full range of built qualities that contribute to a sense of place. One effort to incorporate

Hillier’s discoveries in such a widened sphere of possibilities, is Bentley et al., 1985.

5. O. Newman, 1973, 1980. In defense of Newman, it must be emphasized that he, too, sees street life and informal interaction as a crux to revitalized urban neighborhoods. If we assume Hillier to be correct, Newman’s major blunder is to begin with the part (a particular housing project or neighborhood) rather than the whole (the “virtual community” as it can become real through street layout and pedestrian activity). Many of Newman’s design ideas (e. g., taken-for-granted surveillance through windows, major interior activity areas like the kitchen facing the street) are compatible with Hillier’s approach; the need is a thorough discussion of similarities, differences, and a reconciled whole.
6. A excellent space-syntax critique of these approaches to urban design is found in Peponis, 1989.
7. E. g., Alexander et al., 1977, Alexander, 1987. As with Oscar Newman (see note 5), a critical examination of the similarities and differences between Hillier and Alexander would be a useful exercise, both conceptually and design-wise. One of the most striking commonalities is that both men insist that programming must first identify and design for large-scale concerns before dealing with smaller-scale issues. Hillier himself attacks Alexander’s work (e. g., Hillier & Hanson, 1983, p. xi), but one can imagine that the breadth of a revised pattern language might be able to include Hillier’s insights and, in turn, make the pattern language and Alexander’s theory of urban design much stronger and real experientially.

In this regard, the large-scale patterns in *Pattern Language* that deal with settlement layout as a whole seem, overall, idealistic when compared to Hillier’s deformed wheel and axial and convex spaces. One preliminary effort to consolidate the work of Hillier and Alexander is Bentley et al., 1985.

8. For example, one of Jacobs' four conditions for diversity is several *primary uses* – i. e., anchor activities, like dwellings and work places, to which users *must necessarily go* (Jacobs, 1961, chap. 8). There must be various patterns of relationship among circulation layout and uses served, though Hillier makes little mention of this linkage. In regard to ways in which formal qualities of the built environment contribute to a sense of place, see, for example, Harries 1983, Thiis-Evensen 1987, and Bentley et al., 1985, chap. 5.
9. It is important to mention that Hillier has also considered building interiors in terms of syn-

tax. One aim is to examine “how a building works to interface the relation between occupants and those who enter as visitors” (Hillier & Hanson, 1984, p. 143). Though not considered here, this work, especially as it considers the relationship between inside and outside as facilitated by architecture, is also relevant to a phenomenology of place, especially the way that interior spaces, movements, and encounters can contribute to a sense of community or separation. The major discussion of architectural space syntax is chapters 4–6 in *Social Logic*; also see Peponis, 1993; Shoul, 1993.

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