Curious Little Diagrams

GESTALT PSYCHOLOGY AND THE URBANISM OF COLIN ROWE AND KEVIN LYNCH

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More than any other medium, the image and the diagram are fundamental to contemporary architectural production. Through contemporary digital platforms, architectural production has swerved at once towards more realistic images and towards increasingly abstract and complex data-driven diagrams. A similar confluence of media and technology brought these issues to the core of architectural and urban debates once before in the post-World War II era. *Image of the City* by Kevin Lynch and *Collage City* by Colin Rowe and Fred Koetter are two canonical texts that emerged from that era and continue to influence our understanding of the nature of cities and the discipline of urbanism. These texts applied Gestalt concepts to the study of the city. Gestalt psychology developed the framework of figure and ground to decode the visual world through a compelling visual language centered on the black and white diagram.

Through their readings of Gestalt psychology, these authors brought a new discourse to urbanism: perception and subjective experience. Explicit in both texts is a critique of modern urbanism. Both reject modernism's reduction of the city to objective criteria of function and efficiency and speculate that subjective factors influence how we experience and read the city. But how can we study the dynamics and importance of these factors? Both texts use diagrams to render subjective experience in objective terms and articulate importance of relational patterns (Lynch) and structured space (Rowe and Koetter). Though these authors' methods continue to be influential, an understanding of their psychological and formalist basis has been lost along the way. Thus, in order to reappraise the continuing validity of these texts for contemporary practice, their foundations need to be reexamined.

Gestalt emerged in the early 20th century through the discoveries of German psychologists Max Wertheimer, Kurt Koffka, and Wolfgang Köhler. They established the framework of figure and ground. According to the Gestalt, we see a world of forms and patterns that are stable, coherent, and known to our mind and that emerge from a field of amorphous sensations. (1) Rudolf Arnheim asks, "How is it that human beings, equipped with two eyes see a single world? ...Art (as well as perception under almost all conditions) has to deal with the organization of the visual field into figure and background."(2) The figure emerged from the concept of Prägnanz, the belief that the brain, rather than piecing together small "atoms"(3) of perception, imposes one whole "psychological organization" on sensations received by the organism.(4) According to Köhler, "Perception is always a unitary process, a functional whole, which gives, in experience, a sensory
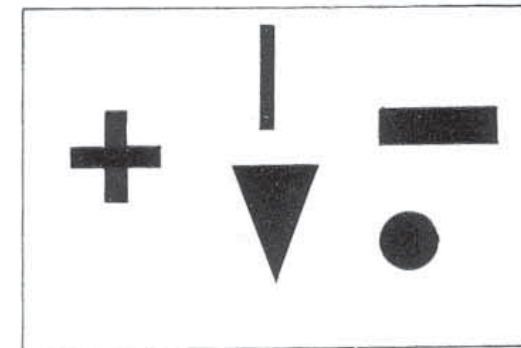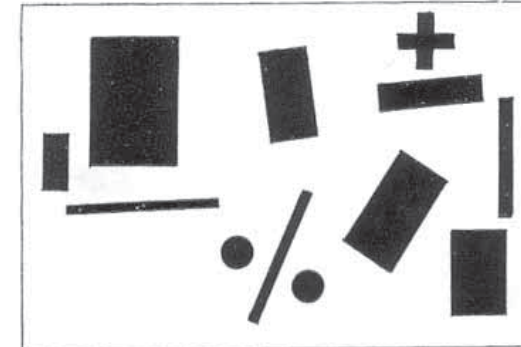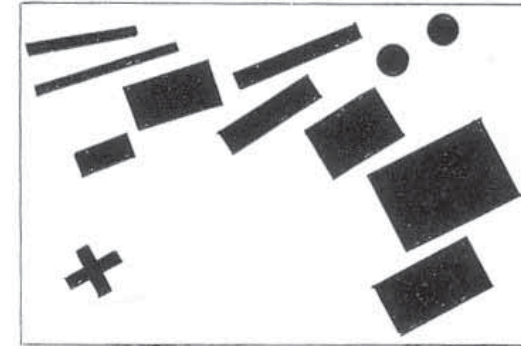
scene rather than a mosaic of local sensations."(5) The mind organizes the amorphous visual stimulus it receives from the world into a mental image of whole forms and patterns. Gestalt established laws of formal organization; figures emerge through the implied continuity of congruent lines, implied contours, and the grouping of like elements.(6) Through a diagrammatic language of line, planes, and forms, the theory devised an abstract formal language that decodes the chaotic information we receive from the world.(7) In the post WW II era, Gestalt thinking spread rapidly into the visual fields of art and architecture, fueled by the precise and uncanny diagrammatic language the theorists devised to demonstrate their points.(8) A major figure in the dissemination of these ideas in the visual fields, in North American academies was Gyorgy Kepes.

For Kepes, perception "implies the beholder's participation in a process of organization. The experience of an image is thus a creative act of integration."(9) As Reinhold Martin recounts, Kepes extended the "perceptual framework" of Gestalt from art and architecture "into the urban scale."(10) The modern city—the man-shaped environment—is the natural subject matter of Gestalt psychology. Unhinged from organic logic or humanist scale, the portrait of the city as an aggressive sensory onslaught is a recurring theme in urban writing from Flaubert and Benjamin to Kepes and his contemporaries.(11) Gestalt psychology, as the major theory of perception developed after the advent of the modern city, with its delineation of meaningful figures set against a ground of noise, was uniquely equipped to decode the new city. Kepes' reading of Gestalt theories was fundamental to both Kevin Lynch and Colin Rowe. Kepes "collaborated closely" with Lynch on the background research for *Image of the City,* and his analysis of transparency in modern painting was the point of departure for Rowe and Slutzky's famous essays on the topic.(12)
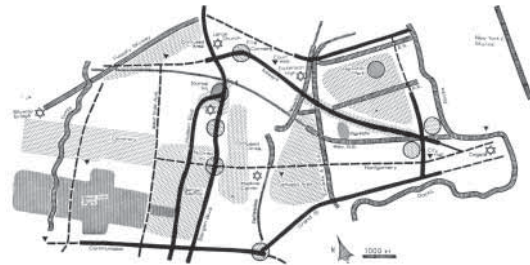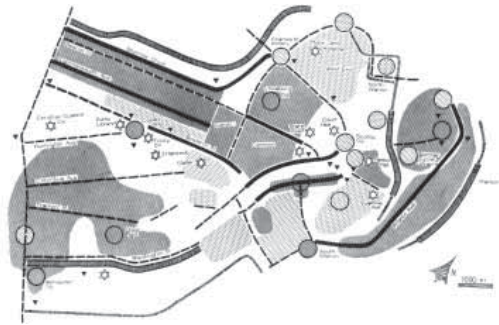
Image of the City, published in 1960, sought to understand how people visualize their city. Drawing on field interviews with local residents, Lynch synthesized their shared mental reading of the city. The influence of Gestalt psychology is evident in the nature of the mental image Lynch sought out. This this image is composed of elements which "are not only able to be seen, but are presented sharply and intensely to the senses."(13) This binary distinction between a prosaic seeing and deeper mode of seeing is critical for both Lynch and Gestalt. It is not enough for stimulus to reach the retina. It must impress itself on the mind. "A workable image requires first the identification of the object, which implies its distinction from other things, its recognition as a separate entity". Elements must be distinguishable as figures against a ground, or as Lynch phrases it, they must be highly imageable. Elements are categorized as paths, edges, districts, nodes or landmarks. Each element must have clear and memorable form; needless complexity only causes cognitive ambiguity. Having poignant ends and coherent contours strengthens elements. The mental image is fundamentally organized, its elements "must be patterned together to provide satisfying form."

Lynch's diagrams catalogue and spatially organize the elements of the mental city image. They identify which of the five urban image elements occur and where. The diagrams are abstract; they have a small scale and little detail, and use symbols and notation

devices to call out elements. The diagram is a map of the mental terrain of the city and not necessarily the mental image itself. "You can provide the viewer with a symbolic diagram of how the world fits together: a map or a set of written instructions. As long as he can fit reality to the diagram, he has a clue to the relatedness of things."(14) Diagramming for Lynch is an analytic process, which pre-stages the design process—a "background upon which creative decisions can be made."(15) Using the conventions and abstractions typically used to analyze functional systems of the city, Lynch seeks to document and make objective the subjective and personal mental images of a city's citizenry. The abstraction diagramming system allowed Lynch to compare the perceptual dynamics of different cities, regardless of geographical and historical contingencies.

His diagramming process reasserts the city as a whole. Lynch expresses a concern that a disaggregation of the built environment could alienate individuals within the social environment. Thus in "The Sense of the Whole," he makes a social appeal: "in a democracy, we deplore isolation, extol individual development, hope for ever-widening communication between groups"—values that are achieved more easily if an "environment has a strong visible framework and highly characteristic parts [and] if strategic links in communication are clearly set forth."(16) For Lynch it became essential that the city be grasped as a whole that is organized and mentally memorable.
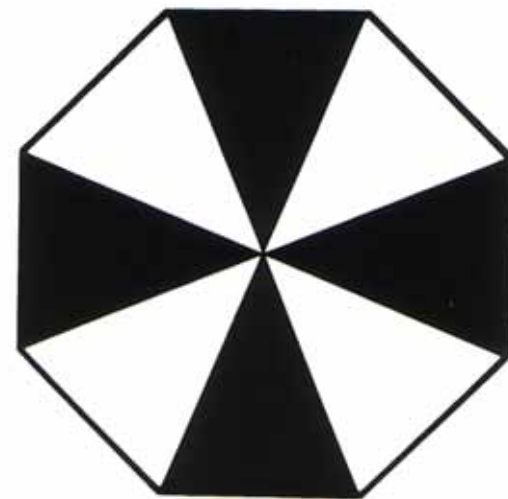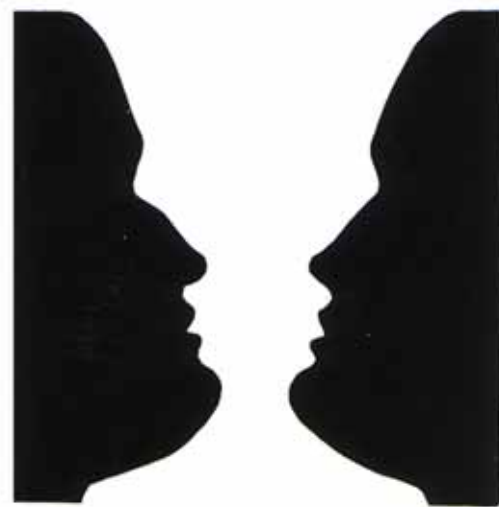
In *Collage City,* Colin Rowe and Fred Koetter analyze the city "from the point of view of perceptual performance" with the figure-ground diagram as their primary tool. They were not the first to use the figure ground diagram to analyze urban morphology. Certainly Camillo Sitte's illustrations of medieval civic spaces in *City Planning According to Artistic Principles* from a century prior is an important precedent. Their study is distinguished because of the way in adopts the Gestalt framework of figure ground. In "The Crisis of the Object," the authors make the emphatic claim that the modern city can be condemned by "Gestalt criteria" alone:

> *For, if the appreciation or perception of object or figure is assumed to require the presence of some sort of ground or field, if the recognition of some sort of however closed field is a prerequisite of all perceptual experience and, if consciousness of field precedes consciousness of figure, then, when figure is unsupported by any recognizable frame of reference, it can only become enfeebled and self-destructive.*(17)

The modern paradigm fails because of the limitless unstructured ground, which erodes at the structured "public realm" of the traditional city. Where modern developments have succeeded, they only do so because they interact "parasitically" with adjacent fabrics of traditional cities.(18)

Collage City was not Colin Rowe's first interaction with Gestalt psychology. As mentioned previously, he and Robert Slutzky use the Gestalt framework of figure and ground to analyze architectural form and façades in their *Transparency* essays from the 1960s. In the second essay, the authors express their admiration for the "curious little diagrams" of Gestalt psychologists.

> *[I]f in the presence of these diagrams we can overcome our primary amusement at what seems to be a discrepancy between a highly intellectual psychology of perception and its highly ingenious visual examples, we might recognize these as exhibiting ...the crucial circumstances which permit the development of the more complicated structures we have examined.*(19)
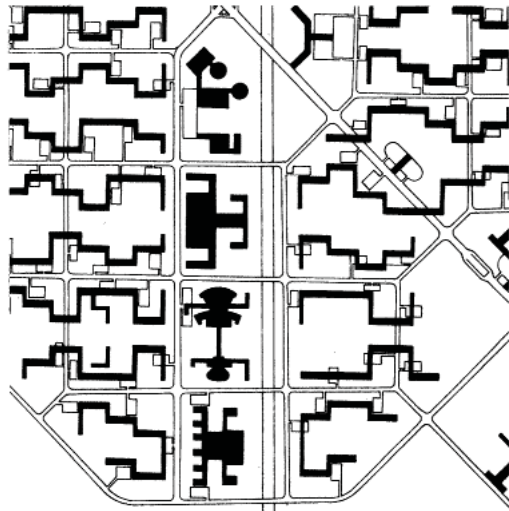
THE CITY OF TEXTURE VS. THE CITY OF OBJECTS

(far left) Parma, Italy: Detail, 19th century.
(left) Le Courbusier Plan for Antwerp, 1933 Detail. From Rowe and Koetter "The Crisis of the Object" Perspecta *Vol 16*

They were particularly interested in those diagrams in which figure and ground have an ambiguous relationship such as the face/vase diagram. These diagrams—"duo visions" possess a compelling ambiguity and complexity because the reading of figure and ground is unstable, shifting and prone to reversals.(20) It is not surprising, then, to find Rowe and Koetter, at the conclusion of "The Crisis of the Object," once again espousing a preference for urban forms, such as the Manica Lunga of the Quirinale, which fluctuate between figure and ground.

Rowe and Koetter use the figure ground diagram to set up a number of comparisons, which span across time and place. Most involve Le Corbusier as a straw man for the modern city. The figure-ground comparisons demonstrate the traditional city of texture is the "inverse" of the modern city of objects, and they "present themselves as the alternative reading of some Gestalt diagram illustrating the fluctuations of the figure-ground phenomenon."(21) The figure-ground, as deployed here, is the opposite of an x-ray in that it renders the city more opaque, less complex. It reduces

and flattens the terms of consideration, rendering the city as two-dimensional composition to be analyzed pictorially.

The figure-ground is a discursive tool. It polarizes differences between traditional and modern urban form and plows over complexities. It reduces the entire discussion literally to black and white. It is ironic that Rowe and Koetter, after having labored to establish this binary by carefully orchestrating the most contradictory precedents, seek the middle ground. They identify a mode of creating urban form that straddles the poles they erected, as the reasoned voice of reconciliation.

Image of the City and *Collage City* bracket a library of canonical texts such as *The Life and Death of Great American Cities* (1961), *The Architecture of the City* (1966), *Defensible Space* (1972), and *Learning from Las Vegas* (1972), which reframed architecture's relationship to the city and brought an end the modernist paradigm. Each text uses a different conceptual framework, such as behaviorism, ecology, or semiotics, to recast the city as a perceptual system.

By embracing the abstraction and diagrammatic tactics of Gestalt psychology, *Image of the City* and *Collage City* could critique modern urban form without undoing modernism completely and binding the authors to historicism or kitsch.

Questions of subject experience and perception continue to be alive in contemporary urban practice, fueling the work of groups such as Space Syntax and the Sensible City Lab (to name but two). When the texts examined here are brought into comparison with contemporary work, one cannot help but be struck by the simple and reductive manner in which the city was discussed back then. To be sure, contemporary practices avail themselves of more powerful and dynamic technology, which enables more responsive and nuanced visualizations of the city to emerge. But fundamentally, their reductive nature has to be traced back to Gestalt psychology. This was, after all, a psychological theory that was abstract and reductive at its core. It carried little consideration of how we learn from the diversity of experiences and stimulus an ecology (be it natural or urban) offers. It is theory with little sense of time, place or culture. The prominence Gestalt psychology enjoyed academic discussions beyond psychology in the 1950s began to wane in the 1960s as new critical voices emerged. At the same moment, architectural discourse drifted away from psychology towards linguistics and critical theory. Newer psychological theories, notable most notably J.J. Gibson's ecological model and David Marr's computational model, never crossed into architectural discussion. The vestigial remains of Gestalt psychology continue to exist within our discourse, and its dictates of "good form" have ossified into rules of thumb. Though these texts opened up a vast set of questions for urbanism, we need to hold the psychology at its core and the methods it inspired with a critical distance.

NOTES

(1) Gordon, Ian E. *Theories of Visual Perception* (Third Edition). Hove: Psychology Press. p.14

(2) Arnheim, Rudolf: See also the introduction of *Art and Visual Perception:* "The experiments I am citing and the principles of my psychological thinking derive largely on gestalt theory. This preference seems justifiable. Even psychologists who have certain quarrels with gestalt theory are willing to admit that the foundation of our present knowledge of visual perception has been laid in the laboratories of that school."

(3) "I start with the flourishing of new ideas up until the 1930s, starting with the notion that, at least since the days of John Locke, assumed that mental life went from the simple to the complex and that complex operations were painstakingly constructed out of elementaristic components. As was shown earlier, David Hartley made explicit the notion that complexity equals summation. This seemed such an obvious formulation that it was difficult to combat, and it was not until the beginning of the twentieth century that serious consideration was given to the proposition that complex units and operations may be acquired and used in one fell swoop." Mandler, George. *A History of Modern Experimental Psycology.* Cambridge: the MIT Press. 2007, p.109.

(4) Mallgrave, Harry Frances. *The Architect's Brain.* Chichester: Miley_Blackwell. 2010. p.87

(5) Kohler quoted in Mallgrave, p.89

(6) Bruce, Vicki, Green, Patrick R., Georgeson, Mark A. *Visual Perception: Physiology, Psychology and Ecology.* Page 127.

(7) Kepes, G. *Language and Vision.* Paul Theobold and Company, 1964., p.9, 13.

(8) Gestalt workers concentrated mainly upon strong effects in perception, a legitimate approach, but they went further: whenever possible their readers are offered, not a table of experimental results, but a compelling illustration. The emphasis is upon experience rather than data. The reader is to be convinced, not by the results of some experiment, but by what he or she actually sees. The unusual power and clarity of Gestalt writings owes much to this tactic.–Gordon, p.15.

(9) Kepes, p.13.

(10) Martin, Reinhold. "Environment, c. 1973." Grey Room. Issue 14, winter 2004, p.83.

(11) Ibid.

(12) Martin, p.83-84.

(13) Lynch, Kevin. *The Image of the City.* Cambridge: The MIT Press, 1960, p.9.

(14) Lynch. p.11.

(15) Lynch, p.25.

(16) Lynch., p.110

(17) Rowe, Colin and Koetter, Fred. *Collage City.* Cambridge: MIT Press, 1978, p.64.

(18) Rowe and Koetter, p.65.

(19) Rowe, Colin, and Slutzky, Robert. "Transparency: Literal and Phenomenal (Part 2)." In *Architecture and Culture* Ockman, Joan ed. New York: Columbia Books of Architecture, 1993, p.221.

(20) "Transparency: Literal and Phenomenal (Part 2)." p.224

(21) Rowe and Koetter, p.64.